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pages 29 to 36

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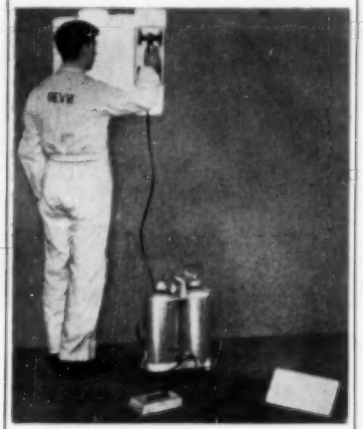

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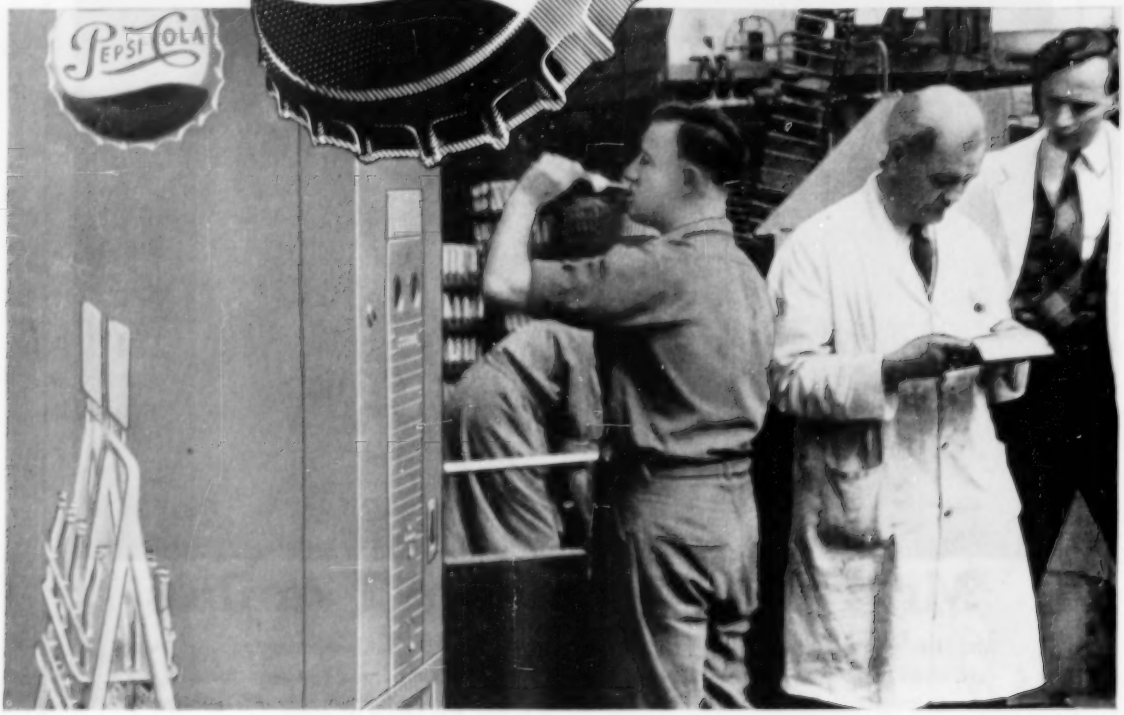

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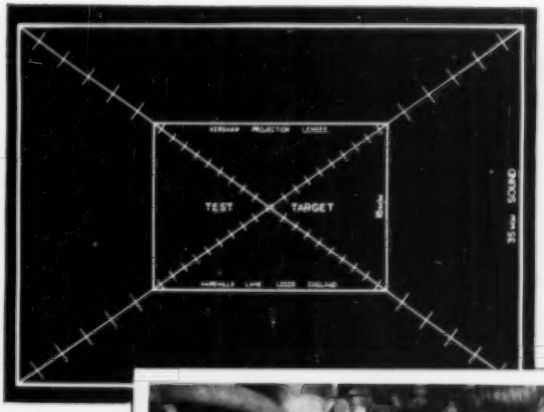

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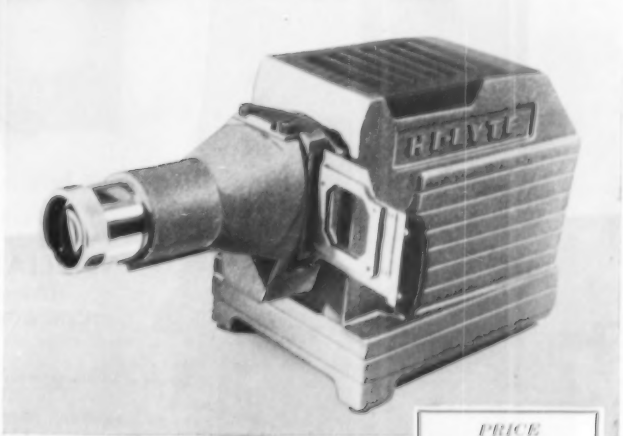

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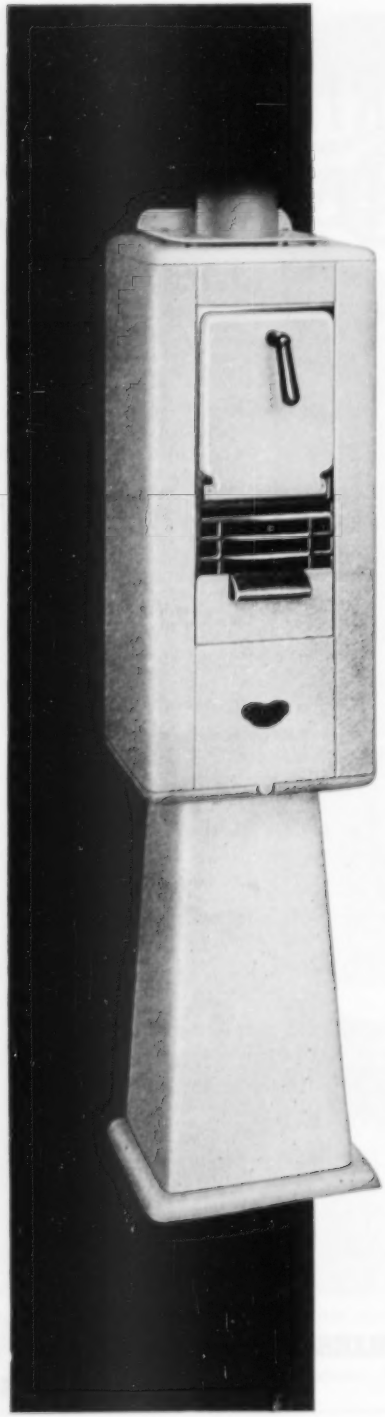

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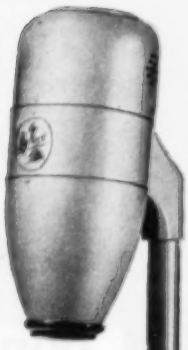

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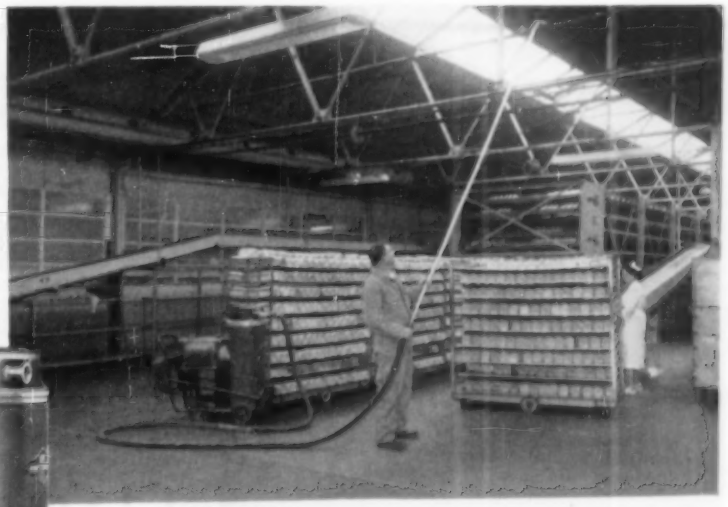

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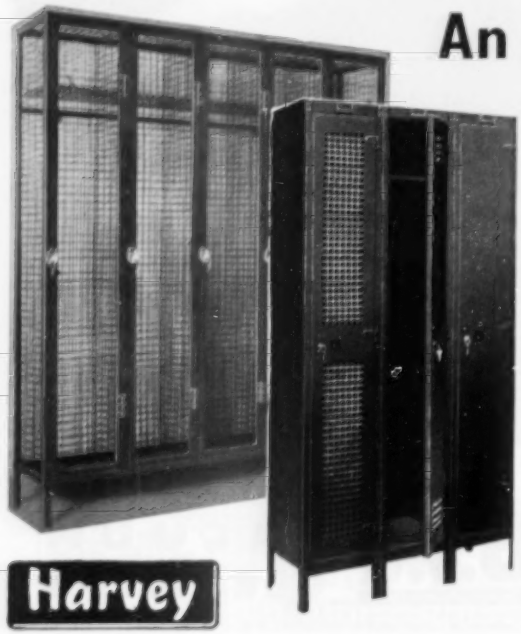

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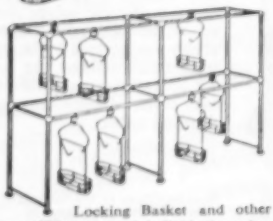

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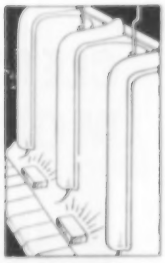

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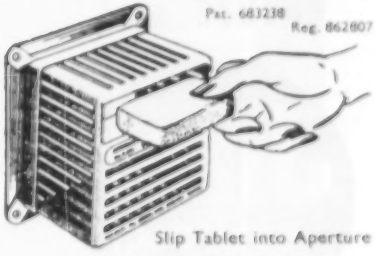

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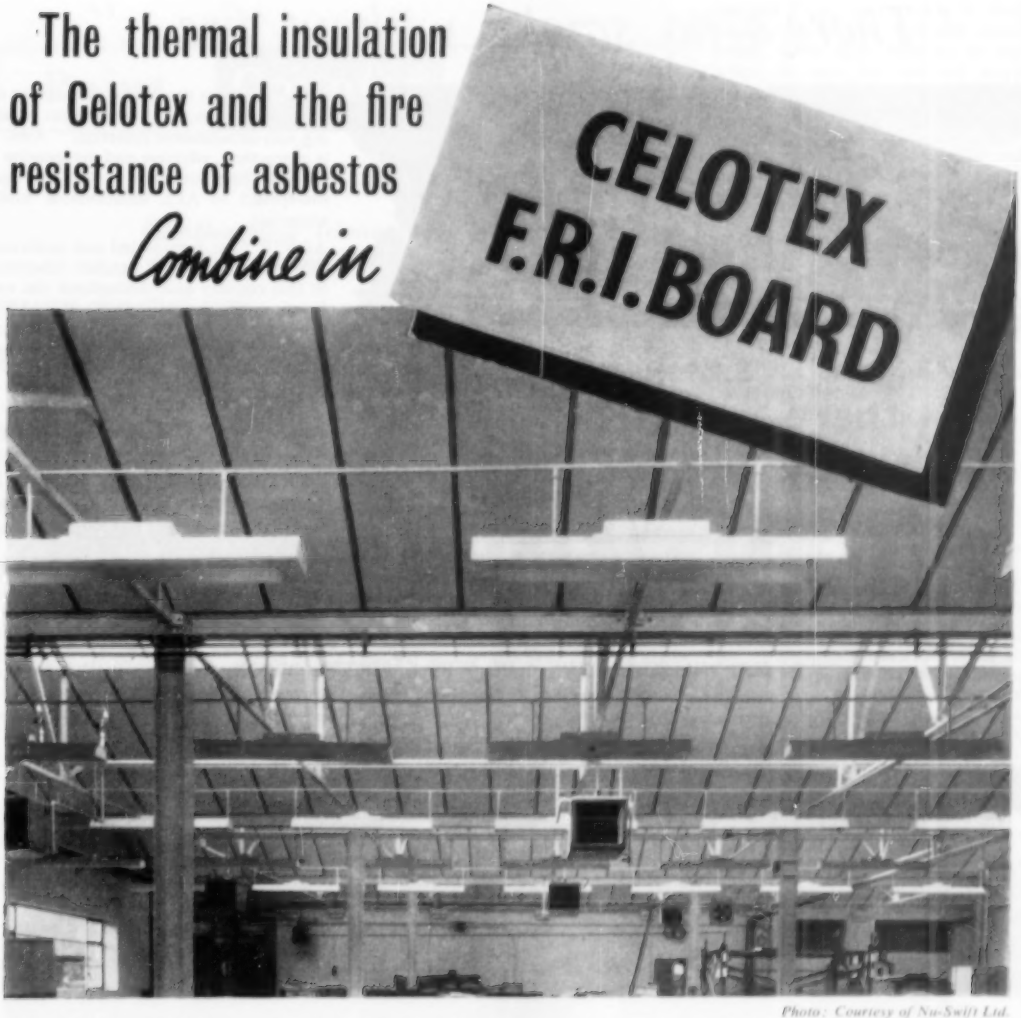

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Point Counter Point

Challenging Ideas & Events in Personnel Management

PITTANCE FOR THE SICK

ARE British firms, even those which lavish money on welfare, stingy and hopelessly out of date when it comes to sickness payments? So it would appear from a recent survey by the Industrial Welfare Society on Sick Pay Schemes and Benevolent Schemes among Hourly-Paid Employees.

The author, William Durham, has collated information sent in by 115 firms and has come to the general conclusion that sickness payment schemes are increasing while sick and benevolent funds are losing their value as inflation continues. But while the number of sickness payment schemes may be going up, there is no indication that the generosity of the average scheme is following suit. Says Mr. Durham:—

"The cost of a first class sickness scheme should not be more than 3½ per cent of the wage. The highest figure in the present survey is 2½ per cent . . .

". . . It is true that the individual firm must concern itself with its own competitive position in the market, yet it is strange how rarely these firms which are more generous in these matters disappear in the economic race. On the contrary they appear to prosper. Perhaps this is because the same spirit which prompts the firm to look after its employees helps to create a more co-operative, creative and productive atmosphere on the workshop floor."

Mr. Durham is of course aware that payment in full for sickness could well increase the amount of absence, but he argues that adequate supervision and records could keep such abuse well under control and possibly eliminate it in time. On the other hand:—

"Many employees with family responsibilities cannot normally afford to be off sick and may return to work before they are really recovered. In doing so they may undermine their constitutions and develop chronic ailments which will lead to far greater absenteeism in later life."

Another argument Mr. Durham puts forward is that if the firm is willing to pay for illness it will try to make doubly sure that nothing in the workplace will cause illness. It may also take greater interest in preventive medicine and in this way the loss of 300 million working days caused each year through sickness could well be perceptibly reduced.

At the present time if an employee receives only National Insurance Benefit then his income falls to one-third or less of its normal level whenever he is ill. "There can be little doubt", says the author, "that the time is coming, perhaps within this century, when such a practice will be looked back on with the same surprise and indignation with which we look back on the working conditions of the early nineteenth century."

To which I would only add two comments. First, no worker is likely to respond to the call (however sincere) to break down class hostility in industry when he sees the salaried employees being paid in full when they are sick. Second, Mr. Durham's survey coincided with the news of our chief competitor's—Federal Germany—fantastically generous national insurance scheme.

* * *

A MANAGEMENT Press journalist was recently being shown round a factory in the Midlands by the managing director. Pencil poised over his reporter's notebook, he asked:

"How many men do you have working here?"

"About half of them", replied the managing director.

* * *

OUR FRONT COVER

Good Housekeeping as an aid to general factory morale is the main theme of this issue. Our front cover shows the polishing shop of the Mitcheldean factory of Rank Precision Industries (B.A.F.) Ltd. This factory which employs 569 people is a model example of what can be achieved by tidiness plus an imaginative colour scheme.

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Point Counter Point

"You're deliberately trying to frustrate us by agreeing to our terms!"

DREAM OF MOBILITY

"MEN must have the longest possible notice of the ending of their jobs", said Dr. Nathaniel Micklem, president-elect of the Liberal Party, in a recent speech, "and where they have to move to another town there should be a lump sum available to help in their removal. There should be help in finding a new home and if they must learn a new skill, they must be given the opportunity."

This is not the first time—nor will it be the last—that a politician has echoed the dreams of the classical economists. One of these visions, and a worthy one, was a labour force highly skilled and as mobile as our present-day motor scooters.

In turn this argues a housing position so idealistic as to be positively absurd. For such a happy state of affairs in the labour market each town which boasted industry in any sizable amount would also have to have a reserve of decent housing ready to receive the skilled influx. The housing lists of local authorities are comment enough.

Yet, logically, the position is not quite so bad. There must certainly be some degree of mobility in our labour force, but no longer to the extent envisaged by the text-book. As automation increases, it will lead to a standardisation of skills among workers, and the need to bring in men from other parts of the country should consequently diminish.

On the other hand what will be needed more than ever is greater mobility among top technologists, and it might well pay managements to study the housing situation in their own localities. Here, a lead could be taken from the football clubs who always make sure that the star they have bought gets a house—and a good one too.

HOW TO CUT WASTE

AN anti-waste campaign needs the wholehearted support of employees. So much for the truism, but how do you get your employees interested? The Nobel Division of ICI has found the answer: run an anti-waste competition with money prizes.

This is their seventh year of such a campaign and amongst other things they have learned that a creative competition, however attractive the prizes, will not bring as many entries as one in which the workers merely have to place a number of posters or photographs in order of merit.

After two years of disappointingly low interest they launched this style of contest, and since then interest has soared, reaching a record entry last year of 60 per cent of all eligible employees. These are all payroll employees; members of staff are not eligible.

The competition form contains black and white reproductions of 10 cartoon posters which are subsequently displayed throughout the firm. The winners are those whose entries conform most closely to the order previously decided by a small managerial committee. Chance may play some part in the result but the entrants who study the pictures and messages closely will have the best chance of winning.

In the preliminary round competing units are smaller factories in the Division and departments in the Ardeer Factory. Four prizes of £5, £4, £3 and £2 are awarded in each unit. These unit prize-winning entries are then considered for the Divisional prizes of £30, £20 and £10.

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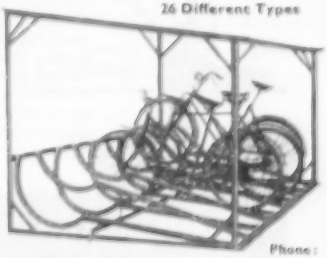

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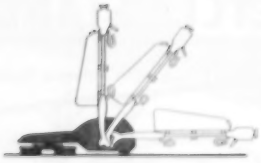

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Point Counter Point

SMALL FIRMS' DILEMMA

WHAT chances has the small firm nowadays of building up the necessary supply of technological skill to keep in business? Britain's lamentably small output of technologists has been stressed often enough lately, and recent advertising in the less sensational Press gives every indication that the large and prosperous firms are doing everything they can to cream off the new supplies from the universities and technical colleges.

Some large firms have been doing this for years of course, one example being the Shell Group through whose plants and research centres nearly 900 university students have passed since 1946 on vacation training courses alone. These are not "holiday relief" posts but practical instruction courses designed to give students practical experience in—and no doubt an appetite for—the oil industry. Accommodation and full board are provided free of charge and the company also covers the cost of travel as well as paying a small sum each week to cover incidental expenses.

Virtually no small firm has the resources to carry out like persuasion, and their problem will be made all the more acute now that the battle for the technical men has been joined in real earnest.

Some small firms think they have a trump card in that any gifted technologist who joins them is likely to catch the management's eye much more quickly. He may also have greater responsibility and therefore a better salary. Other small firms are tackling the problem by making their production processes more automatic and hence capable of being controlled by a first-rate few.

Even so, the matter is obviously not quite as simple as that, and next month's *Personnel Management & Methods* will carry a detailed enquiry into the topic.

BLONDES AND WOLVES

MEN of the cloth—bless them!—have a habit of opening their mouths and putting their foot in it. No other calling, it seems, can so well interweave sense and nonsense.

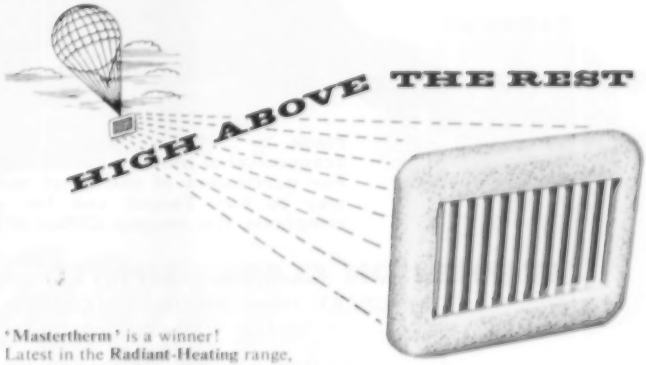
Take, for instance, the words of the Rev. Hugh Hopkins, rector of St. Mary-le-Bow, at a recent lunch-time service to young typists and clerks.

"Relationships between a man and a woman often start in the office", he said, "where people are thrown together in what is really an unnatural atmosphere."

The rector then went on to denounce two types, the Office Blonde and the Office Wolf. Of the first he said: "the phrase has become a by-word and she is lowering the standard of the world's morals. We must do something to fight this." Of the second: "there are some men who can pick up and drop a girl as casually as a cigarette. This is all wrong. It will leave a scar with the girl and she may never marry."

Anyhow, the rector need not worry. The day is probably not far off when electronic computers and the like will put "paid" to all these human irrelevancies.

Students take a look at Shell.



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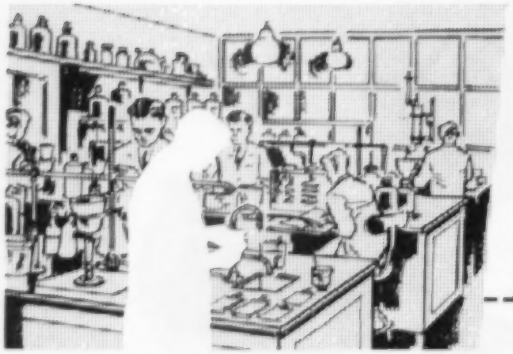

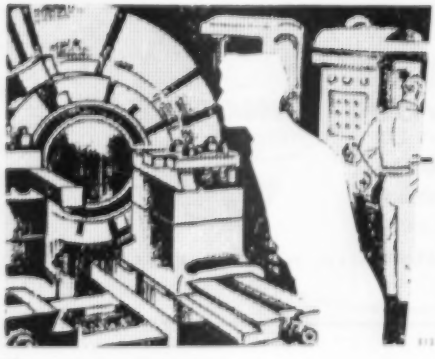

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Spring-Clean Your Factory This Summer

By W. R. BURNS

A clean and tidy works boosts the morale of the whole firm, notably of the men and women on the shop floor. If you cannot spare the production time to give your factory a new look, make use of the two-week shut-down for the annual holidays. This special feature is a detailed guide to the jobs that can be tackled.

TO the man who spends much of his life on the shop floor, the conditions of that place mean more psychologically, perhaps, than anything else. If the works are gloomy, then the effect will be evident in the attitude or work of the staff. If the working area is allowed to become untidy and ugly, then the effects will be equally evident. Exactly the same reasoning holds good for heating, light, decorations, the condition of the air breathed, and the steps taken for welfare and works amenities generally.

In factories where forthright, positive steps have been taken to brighten the working conditions the rewards of such speculation have not been slow in appearing.

The annual staff holidays provide a real opportunity for steps to be taken in the business of decoration, cleaning, reorganisation, construction and the installing of new plant.

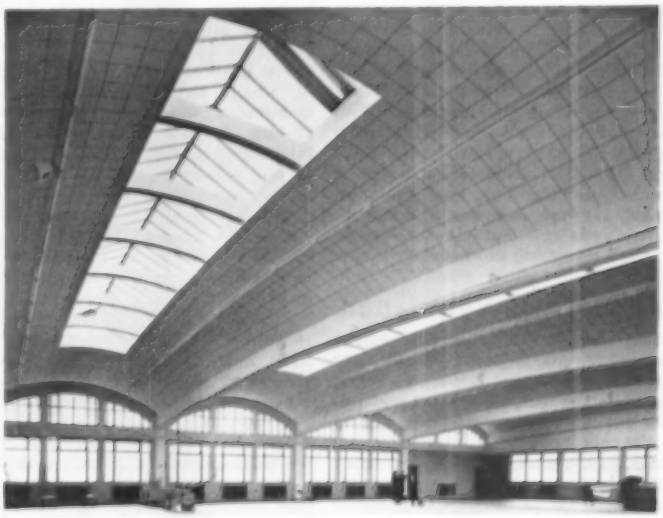
Effects of Noise

In many light and heavy engineering works persistent noise is a factor to be reckoned with, particularly in shops composed of brick or concrete and with steel roof structure. Steps should be taken to deaden the impact of machine noise, especially presses, automatic equipment and such hand-power tools as riveting guns.

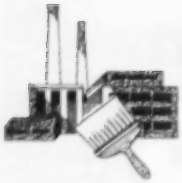
It is quite true that people working in such a place soon become accustomed to the sound and can talk without much difficulty. The best medical opinion, however, holds that such people subconsciously put for h a certain nervous effort to insulate themselves from noise and that the result of this continuous strain over a long period impairs their nervous systems.

It has also been proved that great losses in time, money and efficiency are caused by noise. To give some idea of the effect of noise: ordinary conversation is given a noise factor of 50; a riveting gun, in the open and at a distance of 35 feet, has a noise factor of 100. Imagine, then, the noise level of a large shop, confined, and with perhaps more than a hundred machines operating at once. This, when the threshold of *feeling* is only 130 on the same scale!

There are many steps that can be taken in the work of noise abatement, several of which have other advantages also. Perforated acoustic tiles, fitted to walls or ceilings, have excellent sound-deadening properties. Celotex Limited manufacture several products, such as



Aesthetic as well as functional are these sound-absorbing Celotex roof tiles at the head offices of Taylor Woodrow Construction Ltd., Southall.



Clean Sweep For Your Factory

Acousti-Celotex Tiles, and *Five Star Perforated Hardboard*. *Tentest Rabbit Warren Tiles and Boards* and *Perfonit Extra* (hardboard faced) are obtained from C. F. Anderson and Son Limited. These products are widely used in industry for this purpose.

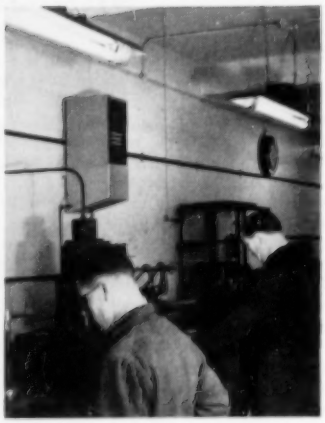
Another noise-deadening product is *Asbestolux*, produced by the Cape Asbestos Company Limited. These are also resistant to fire and heat, damp, corrosion, acids, and to moulds and fungus. Additionally, asbestos boards have a high thermal insulation value, and would undoubtedly cut winter fuel bills if properly erected. Nearly all these surfaces lend themselves to decoration with a variety of coatings, but if noise abatement is to be the object it would probably be better to leave the porous surface.

These boards will not, of course, reduce noise, but will absorb the "impact" in the small perforations and rough, porous surface and soften the overall noise level by reducing echoing.

Anyone seriously concerned with the problem of noise, however, would do well to go to the seat of the trouble—the machines. These can be mounted on rubber pads, or, alternatively, the entire machine foundation can be insulated from the rest of the floor by special rubber matting. This involves preparing a pit to receive the foundation, and lining it with the rubber mats before proceeding. An alternative is to mount the floor on rubber—this, however, is rather a big operation. Full details of the many sound insulation methods in rubber can be obtained from the Natural Rubber Development Board. In addition, anti-vibration mountings are manufactured by W. Christie and Grey Limited, which would do much in cutting down noise.

Heating and Ventilation

These two conditions are among the most important for the health and comfort of factory workers. So far as possible, the ventilation should be sufficient to create a sense of freshness in the air without causing any unpleasant draughts. It is generally accepted that the fresh air supply should amount to roughly 1,000 cu. ft. per hour for each person. It should be in gentle motion with a velocity of about 20 ft. per minute in winter and correspondingly higher in summer.



Two forms of modern factory heating: gas and electricity. Above, G.E.C. Nightstor electric heaters in a Scottish bakery. Right, a Halcyon gas heater by Wm. Sugg & Co. Ltd. fits conveniently to the workshop wall.

In many factories, where harmful grits and dusts are associated with, or created by, the work, individual air extraction plant should be fitted to the machines so affected. Although such installation is primarily undertaken for the health of the staff, it has an additional advantage in lowering the general maintenance costs in the factory by eliminating dust before it has a chance to disperse and ultimately settle all over the building. Suitable installations are dealt with by such companies as Air Plants Limited, Air Control Installations Limited, Vokes Limited, and the Sturtevant Engineering Company Limited.

The temperature of the air for rooms in which light, sedentary work is undertaken should be approximately 65 deg. F., but where staff perform fairly active work, a temperature of 60 deg. will suffice and for those carrying out heavy work, only 55 deg.

The temperature experienced depends not only on the actual air temperatures, but also on the radiation received from surrounding objects. In most factories in winter the walls are usually much cooler than the air and tend constantly to lower the temperature. On the other hand, many industrial processes involve the use of furnaces, ovens and similar heating appliances which exert an opposite effect. Such opposites tend to make the effective heating of large works an extremely difficult problem.

A great factor in simplifying the difficulty lies in an effective insulation system and properly considered ventilation equipment. Ideal for insulation are many of the fibre products mentioned earlier. These, to be even more efficient, can be backed with any of the modern thermal insulators such as fibre glass, wood wool, granulated cork, etc. Where no central air conditioning plant is installed, care should be taken to see that the roof ventilators are properly suited to the building. Experts in these matters are Hills (West Bromwich) Limited, Ventilation Division.

Incidentally, when reviewing these problems, check to make sure that all doors and windows are kept properly closed. From such easily overlooked outlets as these, immense heat losses can occur.

For factories not equipped with large central heating units, there are many very effective space heating products on the market. Well-known companies such as William Sugg and Company Limited, Radiant Heating Limited and Harris Engineering Company Limited, are all experts in applying gas heating to large industrial areas. Similarly, electric heating is available, and G.E.C. have conducted a considerable amount of research into the problem. Most of

these appliances are fitted with fan units which force the heat down into the working area and so provide excellent circulation.

Lighting

Good lighting is an extremely important factor in the attainment of comfort and efficiency. Poor lighting not only subjects the eyes to undue strain and causes a greater risk of accidents and injuries, but it has a depressing effect on the general outlook of the staff. Good lighting, on the other hand, induces cheerfulness, alertness and readiness to work.

In daytime it is usually easy to obtain good natural lighting if the factory has large windows and they are kept well cleaned. In winter, however, artificial lighting may be necessary throughout the day. For most processes this is attained by a good general lighting system such as tubular fluorescent lamps. In addition, the walls and ceilings should be painted in pale colours such as cream or green. Such colours help to prevent any glare which may arise by reflection from polished surfaces or from lights seen against a too dark background.

Operatives employed on normal bench work require a minimum illumination of 10 lumens per sq. ft.; for fine bench work this must rise to at least 50 to 100 lumens per sq. ft. In such cases it is usually necessary to install some effective type of local illumination such as opaque shaded bench lamps.

The influence of good lighting on production efficiency has been proved many times over, and it is thoroughly false economy to be content with a low standard in order to save the expense of a good installation. Its cost will be amply repaid by the resultant increase of output.

Lighting for industrial purposes invariably takes the form of direct lighting either in the tubular system already mentioned, or in normal tungsten filament bulbs placed in heavy duty reflectors. These are usually glazed with some form of frosted or diffusing material.

Before re-equipping a factory with a fresh lighting system it would be as well to consult the British Electrical Development Association, where the very many types of installation can be reviewed.

Factory Cleaning

This is a task that, to be effective, should be carried out on a basis of regular day-to-day maintenance. Nothing is worse for those continually working in a factory area than to be surrounded by dirty walls and floors; in a place where every ledge touched has a thick coating of grime, where windows and roof lights are covered with a residue rendering them opaque and virtually useless, where oil deposits, sawdust and swarf clog the floor around machines.

It is a fact that dirt breeds dirt; in a factory which is kept clean and where the management takes pride in the appearance of the works, the staff will be found, to a large extent, to follow suit and to be more careful about general tidiness. In fact, it will be found that care in these matters will more often than not result in a greatly improved overall efficiency.

When a system of regular, high-standard cleaning is first undertaken in industry, it will probably be found necessary to enforce the policy among the staff by a few simple rules, strengthened by personal supervision on the part of the works manager. To further the policy, it is a sound idea to form a small team of conscientious employees to act as the permanent maintenance staff.

Probably the best thing is to institute a working rota for cleaning. The internal staff to clean the factory and a firm of contractors to regularly clean windows and, say, the offices. This is very often desirable as contractors can frequently carry out a thorough cleaning service at a lower average cost than the combined wage and materials bill for internal staff. *One important thing, however, is to insist on work being carried out thoroughly and consistently by the contracted company.*

To enable your maintenance staff to carry out their part of the work well, it is an excellent investment to purchase reliable cleaning equipment for their use. Not only does mechanical cleaning equipment perform the work more quickly—and thereby permit more cleaning to be done—but it does it much more thoroughly than by hand. An expenditure of £200 on first-class machinery for this purpose will, in the long run, give no cause for complaint, and it is money that will be quickly returned in terms of higher morale and production.

The holiday period is an ideal time to institute such a policy. If necessary, specialist companies can be employed during this time to conduct a high pressure cleaning job, or, alternatively, the new maintenance team could spend the time gradually bringing the building up to a high standard of cleanliness that could be easily maintained during normal working time.

All walls and paintwork on doors should be carefully cleaned, using suitable preparations such as *Teepol*, *Comprox* or *Lissapol*. These can be employed for the great majority of industrial cleaning operations and will prove very useful when cleaning lighting fittings—a task which should be performed regularly if eyestrain is to be avoided.

For these purposes, and others where it is desired to reach any height continually, some kind of powered lifting appliance is very useful. Such equipment can be obtained from the firm of Access Equipment Limited or Shaftesbury Ladders Limited.

Structural steelwork, piping and high level ledges are best cleaned with powerful industrial vacuum equipment. Such plant is a very good investment for your normal cleaning programme, and a very wide range is obtained from New Welbeck Limited, and British Vacuum Cleaner and Engineering Limited, who specialise in factory cleaning requirements. This plant would

The importance of good lighting is fully brought out by this picture of the Knitting Section of Donaldson Textiles Ltd., Alloa. (A.E.I. photo.)

Clean Sweep For Your Factory

also prove useful for the regular cleaning of air-conditioning plant ducting—a frequently overlooked danger spot. In addition, and a further justification for purchase, is the fact that these industrial vacuum units can be applied most successfully to other tasks such as paint spraying, blowing, and applying insecticidal liquids and powders.

Walls and Floors

Wall washing can be carried out very quickly and effectively with the *Revvi*, manufactured by Revvi Limited. A much larger alternative which would probably interest the bigger companies is a steam cleaning machine. Of course, apart from walls, etc., this would have an almost unlimited number of uses about the works and would equally well clean floors, stairways, brickwork, concrete, and machinery and parts of all types. This applies a mixture of detergent and water in the form of hot water or steam through a jet direct to the surface to be cleaned and is extremely effective in removing grime deposits and grease.

Floors are the most vital of cleaning problems in industry. Many factories do not clean their floors regularly because they claim the job an impossible one, or, at best, not worth the trouble. Experience has taught the writer that this is usually due to an underlying faint-heartedness in the face of an untidy, oil-stained floor surface.

Any one of the leading companies in the floor maintenance field is capable of working wonders on all but the oldest, most neglected floors. A few applications of a floor scarifying machine and a scrubbing machine are normally sufficient to completely transform the surface, which can then be sealed with a suitable compound if desired (this is normally unnecessary with high-quality concrete or granolithic floors). All that is needed to maintain this condition is regular scrubbing with appropriate machines. All these services and any equipment, advice, etc., that may be required can be obtained from Cimex-Fraser Tuson Limited, Columbus-Dixon Limited or Truvox Limited, all experts in the field.

If maintenance is to be carried out seriously, it will be advisable to consult one of these companies and to purchase whatever equipment is needed. These machines usually require only the changing of brushes to make them suitable for scrubbing or polishing, and their size ranges from comparatively small units propelled by hand to large power-operated machines which scrub the floor, suck up the surplus liquid, squeegee the floor and dry it with a hot air blast, all in one operation.

It should perhaps be stressed that even the largest of these machines requires very little effort to move it along and the work can be comfortably performed by elderly or female staff.

Factory floors can be better maintained if some arrangement is made for catching oil drips or splashes from machines. Drip trays, filled with a coarse sawdust, are widely used for this purpose, and if a member of the cleaning staff is permanently assigned to such tasks, occasional mopping with some strong detergent such as *Comprox* or *Basol* will do much in keeping the floor pleasing. These precautions, backed by regular use of cleaning machines, should be all that is needed in this direction.

Another very useful piece of cleaning equipment that will save a great many man hours is a sweeping machine. This, augmenting the usual broom sweeping, can effectively clean gangways and corridors in a fraction of the time taken normally. A very popular model is the *Allen Light Factory Sweeper*, which employs a small petrol engine as a power unit. This is manufactured by John Allen and Sons (Oxford) Limited.

Factory staff, in common with everyone else, soon become accustomed to clean surroundings and will unconsciously assist in small ways in keeping the area presentable. Additional care will be taken with cigarette packets and other oddments.

Fire Prevention

In considering the possibilities of fire prevention with regard to wood and fibre board, it is as well to bear in mind the fact that there exists no actual fire-proofing material or coating. All materials are susceptible to the effects

One of the new Mechocleen range by Diamond Motors (Wolverhampton) Ltd. The machine is powered by Exide traction batteries.

SOME MODERN CLEANERS

Left, a Cimex Fraser Tuson burnishing machine, normally for floor maintenance, is here being used to scarify steel plates. Special crimped steel brushes have been fitted. Below, a Truvox industrial scrubber and drier in use at a National Coal Board canteen.

of fire, including concrete and steel. However, there are a great many highly successful fire retardants available which are well worth considering.

A large number of these require impregnation by either the steeping or pressure method. Pressure impregnation is probably the more effective of the two, as it is carried out with the use of a pressure chamber in which the flame retardant chemicals are forced into the wood, thus ensuring deep penetration.

Steeping involves immersing the wood or fibre board into a large open tank containing a solution of the fire retardant at a high temperature. After immersion has been carried out for two to three hours, the solution is allowed to cool, at which time the liquid is drawn into the material, resulting in a fairly deep penetration.

Many of these preparations contain excellent fungicides and preservatives which greatly lengthen the working life of the material. Two well-known companies specialising in the pressure impregnation method are Hicksons Timber Impregnation Limited and The Timber Fire-Proofing Company Limited.

Unfortunately, impregnation can normally only be carried out on new work: in the case of completed constructions, surface coatings applied by brush or spray are used.

These fire-retarding paints form a skin over the material which resists the spread of flame and prevents the surface temperature from rising to the point where decomposition of the wood begins.

Most proprietary fire-retarding paints and finishes depend for their effectiveness on such constituents as various soluble silicates, calcium sulphate, powdered asbestos and kaolin, and a combination of synthetic resin and ammonium phosphate.

The latter of these materials has been developed quite recently and has proved to be extremely effective in practice; this is the case also with sodium silicate-based preparations, intumescence occurs on heating, producing a thick, spongy insulating layer. Such a finish is obtained from Albi-Willesden Limited.

Finishes of the calcium sulphate type are based on anhydrite, to which is added an accelerator and a plasticiser to facilitate brushing. These should be applied, preferably in on coat, as a layer 1/16 in. thick. They are very resistant to fire but are unsuitable for exterior work (as are most of the fire-retardant paints). Coatings of this type are available from ICI Limited.

Other applications are based on ammonium phosphate, casein, borax-linseed oil and heat insulating materials such as mineral wool, asbestos, etc., mixed in the form of a thick slurry. All these coatings are recommended by the Timber Development Association and may be obtained from such firms as the Atlas Preservative Company Limited, Pinchin Johnson and Company Limited, Selmer Chemical Limited, Lewis Berger and Sons Limited, The Timber Fire-Proofing Company Limited and Sprayed Insulations Limited.

All fire-retarding coatings are intended to delay the spread of flame by increasing the period of resistance offered by the construction material. Nearly all fires begin with the combustion of furnishings and only spread to the whole building when the structure has been burnt through at some point.

Corrosion

Corrosion is a tremendous problem in industry today and one that is costing the nation many millions of pounds annually. There is no complete answer to the problem—each type of corrosion presents its own difficulties and demands different remedies. Interior structural steelwork in factories is all too often found to be corroding, due, perhaps, to condensation (look to the ventilation) or to any acids that may be used in processing on the floor below.

Factory maintenance men should be equipped to reach the roof structure at any point desired so as to thoroughly wash down the existing paint-work and apply a fresh coat to the affected parts. If rust is the enemy, it may be necessary to strip off the old coat and treat the steel with, say, *Jenolite*, before re-coating.

In the event of chemical attack from some dipping processes, it is advisable always to consult the paint company and, if necessary, allow them to test their product to obtain its maximum efficiency against the particular corrosive agent present. Allweather Paints Limited are a well-known company who provide an excellent service in this connection. Their chlorinated rubber paints have proved very effective in many cases of corrosion.

In considering these problems, the primer should not be forgotten. This should always be of the highest possible quality, and should include a well-tried corrosion inhibitor, such as zinc dust, zinc chromate or red lead.

Galvafroid is another effective corrosion resisting coating. This contains a high percentage of metallic zinc powder, a plastic binder and a solvent.

A tidy factory should have tidy workers. A good locker room like this one at the Staveley Iron and Chemical Co. makes all the difference.

It is possible to apply it over adherent rust and even on a wet surface. Another advantage is that when this material is in contact with the metal it offers electro-chemical protection. If the surface is scratched in some way, the resultant corrosive action sets up an electro-chemical cell in which the zinc in the coating becomes the anode and is therefore sacrificed in preference to the iron. Such a coating is obtained from Secomastic Limited.

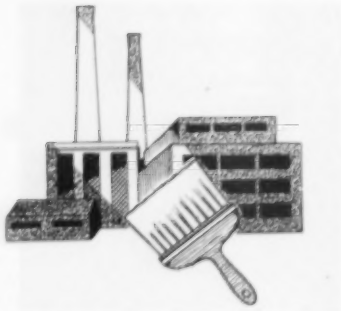
Evode Limited is another company which has a wide range of effective corrosion inhibitors. Among these are *Evodyne* chlorinated rubber paints, bituminous and aluminium paints and improved red lead primers.

It is worth repeating at this point that thorough and regular maintenance of structural steelwork is necessary if rust is not to gain the upper hand. Where chemicals are in constant use, it is best to employ an extraction unit to take away the corrosive vapour and gases.

* * *

These means of caring for staff and property cannot, in the majority of cases, be carried out all at once—but in places where they are gradually introduced their beneficial effects can perhaps be better observed.

Probably the most basic requirement is that of general cleanliness. **Even a moderate level can make a considerable difference, not only in the appearance of a works, but also in its working efficiency.** Equipment always in its proper place is easier to find and therefore less time is taken over a job. Morale becomes higher in light, clean surroundings and in modern industrial psychology, "morale" is defined as "level of willingness". Risking a pun, it can be said that all managements should draw the moral.



Good Housekeeping Shop Window

GREASE REMOVER

DEGREASING can be a difficult job especially over large areas like floors, and if petrol or vapour solvents are used the considerations of cost and safety cannot be discounted. *Jizer* soluble solvent is claimed by the makers to remove these problems and to be more thorough and less crude than strong alkalis or paraffin.

Jizer is applied to large surface areas by brush or spray. If the incrustations of grease or oil are unusually heavy brushing will help the solvent to penetrate, after which the grease can be flushed off with water. If used on metal the thin film of solvent left, the makers say, will prevent rust formation. *Jizer* will take up to many times its own volume of grease and still remain soluble in water.

For smaller components like bearings, ball races, nuts and bolts the makers have designed a pressurised degreasing unit (17 in. by 12 in.) consisting of a robustly constructed steel bucket into which fits a strong galvanised wire mesh basket fitted with a tray for the components. Under the tray is a brass agitator unit into which the pressure unit fits, connected to an air-line. The parts to be degreased are loaded into the basket and immersed in the solvent which is then agitated by the air until the components are free from grease. Trade price of the unit is £5 complete with 5 gallons of solvent. Larger capacity units are available.

Deb Chemical Proprietaries Ltd., Forfar, Chemical Works, Belper, Derbyshire.

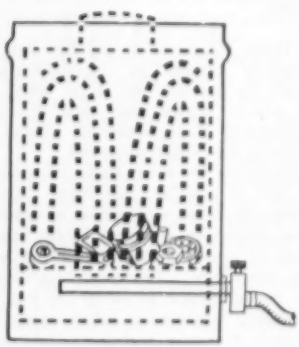


Diagram illustrating the action of the Jizer degreasing unit. Outer dotted line shows the wire mesh basket for components; inner lines show agitation of the solvent from the air input.

METAL PROTECTOR

A NEW product designed to give lasting invisible protection for all polished metal surfaces is now on the market. Called the *Blink Invisible Chrome Protector*, it is a clear cellulose lacquer packed in a small aerosol dispenser. When sprayed on polished metal surfaces it forms an invisible protective coating, which should remain intact for months; all that is necessary to maintain the original polished appearance is an occasional wipe-over with a damp cloth or leather.

Blink also affords protection against rust and rust spreading, and its sealing action prevents deterioration of chromium plating.

Amber Oils Ltd., Dispenser Division, 11a Albemarle Street, London, W.1.

FOR HIDDEN CORNERS

DIRT and dust are often allowed to accumulate for so long that when the job of cleaning is undertaken the damage and deterioration caused is costly to repair or renovate. The *Bak-Vak* industrial suction cleaner is designed to facilitate cleaning in these out of the way places. The machine is light, portable and of robust design, including all necessary equipment for every type of cleaning.

There is no dust bag, a metal container making the task of emptying easier, quicker and more hygienic, and a dust separator separates the dust from small articles which may have been swept up. The motors, which are detachable and interchangeable, are supplied for lighting circuits from 22 V-250 V A.C. or D.C.

(universal), and the units can also be used for spraying and blowing purposes.

Apart from this harness type portable cleaner the manufacturers also supply several other mobile units including the *Simplex* (single motor), *Duplex* (twin motors) and the *Triplex* (three motors).

New Welbeck Ltd., Moulsecoomb Way, Brighton, 7, Sussex.

HONEYCOMB FLOORS

THE company which markets *Hexmetal* claims that it can cut floor installation costs and stoppage time in a wide variety of industries. *Hexmetal* industrial flooring is a fabrication of steel-walled honeycomb cells which when loaded with a filler acts both as a binder and as a separator. It absorbs impact load and vibrations and inhibits cracking caused by corrosive spillage.

A considerable saving in installation costs is also claimed. A floor subject to heavy impact load needs to be made of high-grade concrete to a depth of 4 in. to 6 in. When *Hexmetal* is embedded in the filler, only 1 in.-1¾ in. of high-grade concrete is required on a foundation of inferior mix. The work can be done in sections, as and when production conditions permit.

The use of *Hexmetal* is not confined to interior floors. It is also suitable for surfacing loading bays and roads subject to excessive load or vibration.

Causeway Reinforcement Ltd., 66 Victoria Street, London, S.W.1.

WAX POLISH SPRAY

THE *Jett Sprayer* represents an entirely new principle of application for all types and brands of water-based emulsion wax polish. It applies the wax in a thin, "atomised" spray lightly and evenly over the whole area so that a minimum

of wax is applied ensuring non-slip conditions and preventing a dangerous build-up of wax.

The operator, say the makers, can apply wax polish at a normal walking speed—2,000 sq. ft. of floor can be covered in a little over 100 secs. An independent test carried out by a government department shows that 16,000 sq. ft. of floor are covered by one gallon of water-based emulsion wax polish when applied through the sprayer which does the whole job of application so that no rags, cloths or mops are necessary.

Columbus Dixon Ltd., Capitol Works, Empire Way, Wembley, Middlesex.

ODOURLESS PAINT

A NEW type of synthetic enamel has been introduced which is completely free from odour. *Duramel Odourless Enamel* is available in a gloss, semi-gloss and flat finish, together with the appropriate undercoats, in a range of 90 colours.

It can be applied with brush, spray or roller, and brushes easily even on large areas, with a wet-edge time of approximately half-an-hour. It is "touch-dry" in three hours and "hard dry" overnight giving a tough flexible film claimed to withstand the severest service conditions.

Fleetwood Paints Ltd., Camgate Works, Long Lane, Stanwell, Nr. Staines, Middlesex.

HYGIENIC TILE FINISH

IN many industries glazed tiling has long been considered the most hygienic type of wall covering. But modern research has proved that tiled walls are by no means *completely* hygienic—the joints between the tiles harbour dirt, germs and bacteria which normal washing down cannot eradicate. *Tylex*, the tile-like finish for walls, is offered as an answer to this problem.

It is applied like a paint, but unlike ordinary paints it does not pick up dirt or "break down" under atmospheric or chemical attack. The hard abrasion resistant surface can be frequently washed down without losing its glossiness, and there are no joints to retain dirt.

Tylex can be used on old or new wall surfaces, in any situation where conditions such as excessive humidity, chemicals, steam, grease and oil would normally demand the use of tiling. The range of 18 colours, in addition to black and white, is based upon a selection from the British Standards colours for building range.

Tretol Ltd., The Hyde, London, N.W.9.

HARD-WEARING COMFORT

WHEREVER a carpet is chosen to enhance the interior decoration of offices, conference or welfare rooms, a plain carpet is usually passed over because of its main disadvantage: it shows marks more readily than the patterned type. This, the makers claim, is not the case with *York*, a broadloom Wilton carpet now available.

The pile is formed from thousands of tightly curled, permanently twisted fibres, aimed to give lasting resilience which will resist even shampooing. A label backing all cut lengths gives full cleaning instructions.

York is available in six broadloom widths (7 ft. 6 in., 9 ft., 10 ft. 6 in., 12 ft., 13 ft. 6 in. and 15 ft., and a 27-in. width for stairs and corridors), which means that a room of any size can be fitted with an entirely seamless carpet. Moreover the exact length can be cut and delivered at once. There is an extensive range of colours and the fixed retail price is 78s. 6d., exclusive of fitting.

John Crossley & Sons Ltd., Halifax.

TO PREVENT CONDENSATION

THE problem of preventing condensation resolves itself into turning a surface which is a bad insulator into a good one, and *Cork-Tex anti-condensation* paint provides a convenient means of doing this. The application of two coats of this paint, the makers claim, insulates the surface from contact with the humid air, thereby preventing condensation. It does not act by absorbing the moisture.

Cork-Tex should not normally be applied to a surface without the use of a suitable primer. For ferrous metals the recommended primer is *Parsons anti-rust primer*, for aluminium and light alloys *Parsons zinc chromate primer*, for copper and brass *Parsons clear primer*, and for plaster, concrete, cement-sheeting, etc., *Parsons cement primer*.

Thos. Parsons & Sons Ltd., 70 Grosvenor Street, New Bond Street, London, W.1.

FOR NON-SLIP STAIRS

RIGID Vinyl Stairnosing is another addition to the range of Marley products. The main advantages claimed are the low price, attractive appearance, and non-slip and long-wearing qualities. The product is made in one size only and can be supplied in four colours—black, pewter, bronze and deep bronze.

Two lengths are available—3 ft. and 6 ft., and minimum quantities obtainable are 72 ft. of the former and 144 ft. of the latter. It is claimed to be the lowest-priced stairnosing on the market. Cost is about 1s. a foot.

Marley Tile Co. Ltd., Riverhead, Sevenoaks.

CLEANER'S DUMB WAITER

THIS new addition to the "Clean-Aid" range of cleaners' equipment is made of tubular steel and is mounted on ball bearing castors with large rubber-tyred wheels. The trolley (42 in. long by 38½ in. high by 21 in. wide) easily carries such equipment as buckets, mops, brooms, detergent tins, vacuum cleaner or small polishing machine.

The top tray is made from expanded mesh material and is easily kept clean.

It holds miscellaneous supplies such as cleaning powders, dusters, dustpans, soaps, and four projecting rubber-covered supports not only hold long-handled brooms in position but can be utilised if required for hanging hand brushes, feather dusters, etc.

Powell & Co., Burry Port, Carms., S. Wales.

Management News & Ideas

ILO Says 1956 "Labour's Best Year"

"ONLY a world which has grown accustomed to substantial gains year after year could regard 1956 as disappointing," claims David A. Morse, director general of the International Labour Organisation, in his year-end analysis of the world labour scene. Labour made modest gains last year compared with the impressive advances of earlier years, but these gains were general enough to make 1956 the best year yet in labour's history.

In most countries reporting to the ILO, employment was up and unemployment stood at low levels. Productivity and real wages, on the average, were slightly higher and protection afforded by social security schemes was more generally available and more liberal than before. Nevertheless the outlook at the year's end was clouded by a number of unfavourable circumstances. After several years of price stability, the threat of monetary inflation hung over most of the world, and industrial disputes, which had established a post-war low in 1954, were trending upward. ILO statisticians estimate that total man-days lost through work stoppages in 1956 will be about one-sixth greater than in 1955.

At the end of 1956 the unemployment situation looked somewhat more disquieting than during the earlier part of the year. In November 1956 the number of unemployed in the United States was 3 per cent greater than in November 1955. In the United Kingdom the 12-month increase was relatively more important. The latest information available indicates that although unemployment in the United Kingdom represented only 1.4 per cent of the labour force in December 1956, as compared with 1.0 per cent in December 1955, the number of persons out of work exceeded the number of jobs being offered for the first time since March 1954. The Suez crisis reduced oil supplies in Western Europe, threatened the activity of the automobile industry and, indirectly, the demand for steel used in automobile manufacture.

Of the 25 countries reporting wage statistics for 1955 and 1956, only one reported a slight decline in money wages. In nine other cases, however, money wages failed to keep pace with rising consumer prices, resulting in a decline in real wages. Among the 25 countries as a group the median rise in real wages was 1.6 per cent, compared with 3.5 per cent during the preceding 12-month period.

Shorter Working Week

There was a growing tendency toward shortening the legal or normal working week, particularly in North America and in Western and Eastern Europe. In certain countries with full employment the immediate effect was to raise gross weekly earnings because of interest in maintaining previous work schedules, even when this involved increased overtime payments. The workers' living standards were also augmented by increased and extended social benefits in many countries.

Manufacturing production, as indicated by preliminary figures, continued to rise more rapidly than manufacturing employment (preliminary annual average) in most countries in 1956, implying a continuing increase in productivity per person employed. In a number of cases, however, and particularly in Europe, the increase in manufacturing output was smaller than in 1955.

Top Brass Offer

TWO places each year on a training course in management have been made available to the Officers' Association by Urwick, Orr & Partners, Ltd., management consultants. These places on the firm's eight-week residential course held regularly at Slough, will be filled by high-ranking Service officers about to retire, and eager to start a business career.

Many such officers (of the rank of captain R.N., colonel, group captain and above) retire comparatively early in life, in time to enter a civilian career, and the industrial world attracts a large proportion of them. They often find, however, that their administrative experience in the services is not enough for the new job without some supplementary training in business management technique. The Association has warmly welcomed this recent offer as a means of filling that gap.

Each of the places is worth about 350 guineas, and the first nominee will attend the course beginning in April. Selection is to be made from a short list prepared by the Association, and advice will be sought from the consultant firm on the candidates most likely to benefit from the course. Preference will be given at first to officers with engineering qualifications, but non-technical candidates will normally be included.

Gallic Logic

FRENCH employers are being asked to set up slot-machines selling fruit juice in their factories and offices in a Government-sponsored drive against alcoholism.

This is the latest move by a committee on alcoholism—doctors, education experts, scientists, publicity experts and Members of Parliament—which spends 200 million francs (£200,000) a year in a campaign to stop the French drinking too much wine and spirits.

According to the committee, a Frenchman drinks ten times as much spirits as

A PENNY FOR HIS THOUGHTS

Is he thinking of industry's ugly fascination in this weird sunset panorama? Taken for Dorman Long by Adolf Morath. Next month we are printing a selection of Mr. Morath's work showing the human side of industry in pictures.

an American or Swede, and five times as much as an Englishman. In one year more than 7,000 people were treated for mental troubles due to alcoholism. The average drink consumption of each Frenchman every year is nearly five gallons of pure alcohol.

Mobile Labour

IN picking a plant site, most American companies no longer have to worry about how their employees are going to get to work, according to a *Management Methods* survey of companies throughout the country who have built plants in the past 18 months.

More than 86 per cent of the responding firms paid no attention to the availability of public transportation in choosing their new location. Reason: 97 per cent of employees get to work in private automobiles.

The findings of this survey may indicate a significant trend in the selection of plant sites. In the past, many experts have held that the availability of travel facilities for employees is necessary for a good local labour supply. But this argument is countered by the fact that, with the exception of big cities like New York and Chicago, private autos largely erase the need for public transportation to get people to work.

Another finding of the survey further explains the diminishing importance of public facilities in picking new plant sites: 80 per cent of new plant buildings are located in rural, suburban, or fringe city areas, where almost all families have one or more cars.

Efficiency on Show

THE pressing need for British industry to produce more goods more efficiently will be the theme of an Industrial Efficiency and Productivity Exhibition to be held in the City Hall, Manchester, from November 5-16 this year.

Sponsored by the Institute of Works Managers, the exhibition will incorporate exhibitors in production engineering, mechanical handling, scientific instruments, factory maintenance, fuel efficiency, planning and material control, office equipment, industrial catering equipment and industrial health and welfare.

Film Festival

INDUSTRY is showing great enthusiasm for the Industrial Films Festival which will be held this October in Harrogate. This was reported at a recent press conference called to outline the festival arrangements.

Designed to focus attention on the contribution the sponsored film can make to industry's current problems, the festival will include a selection of the latest and best industrial films produced in this country, together with a number from overseas. There will also be talks given by experts on the production and use of such films with opportunity for discussion and appraisal.

Awards will be made for the best British films dealing with public relations and prestige, sales promotion, training, health and safety, careers in industry, productivity, technology and human relations. Films entered can be either 16 mm. or 35 mm. using all techniques—live action, cartoon, puppet, colour or black and white, providing they were completed after September 1, 1955. Judging will be by people who make the films, others who use them and a number of impartial judges.

Application forms for entry into the competition can be obtained from the festival's organising secretary, 3, Portman Chambers, 7-9, Baker Street, London, W.1. Closing date is July 1, and no entries will be considered after that date unless it can be established that a film was in production but not completed before that date.

British Railways' modernised shed at Grimsby goods depot. The layout is designed to speed the flow of freight traffic, and a closed loop capstan positions the wagons for unloading. The walls are yellow and electric lighting is of the cold cathode type.

Automation by Stages

IT is now the practice of the Solartron Electronic Group Ltd., of Thames Ditton, Surrey, to include in their illustrated review of the past year's progress a special survey and explanation of an important electronic topic.

This year the subject is "Electronics—The Spearhead of Automation", by Mr. Bowman Scott, M.B.E., M.B.A. (Harvard), B.Sc. (Eng.), a director of the group and also the managing director of Solartron Electronic Business Machines Ltd. The treatment is simple and with direct explanations aimed at providing a general understanding of the subject.

"It seems likely", he writes, "that we shall seldom see completely new automatic factories being built from scratch, but rather a gradual integration of automatic devices into existing systems of mechanisation, and only then when they are economic propositions. Industry's requirements will, therefore, be for basic units of equipment which have applications to a variety of processes in one industry or application in a variety of industries. . . . By the growing use of economic assemblies of sub-units steady progress can be made towards automation in organisations which cannot finance the completely automatic plant in one step."

Art and Labour

AN international exhibition on "Art and Labour" is being organised in Geneva this summer by the International Labour Organisation on the occasion of the 25th anniversary of the death of Albert Thomas, the first ILO Director. The Geneva city authorities are co-operating with the ILO in organising the exhibition which will be held in the city's Musée d'Art et d'Histoire.

The exhibition will bring together for the first time oil paintings, water colours, drawings, engravings, sculptures and decorative works from all parts of the world depicting human labour, and ILO director general David A. Morse has invited the organisation's 77 member countries to loan national works of art.

For Safer Welding

TOO many risks are taken too often in the use of welding and cutting equipment, says the Institute of Welding, and to draw attention to the risks its health and safety sub-committee has prepared an information sheet which explains why certain practices are dangerous.

Copies of the information sheet (at 6d., post free, for single copies, with reductions for bulk orders) are available from the Institute, 29 Park Crescent, London, W.1.

GOOD HOUSEKEEPING

Safety Priority Number One

Interest of Everyone Should be Aroused

IT is difficult to get a common perspective on the subject of good housekeeping. The supervisor rushing to make a production deadline does not "see" the resulting disorder and confusion. The workers are used to the muddle and do not "notice" it. The safety officer walking into that department has yet another perspective. He sees the confusion but not the urgency.

So all have a different viewpoint. A professor was addressing a class on nuclear physics. He explained that it was estimated that the sun would explode in 5 billion years from now. One of the students looked very worried and asked him to repeat what he had said. The professor complied, whereupon the student looked very relieved and said "Oh, that's a good thing; I thought you said '*one*' billion years." The student was obviously working from a different perspective, or "frame of reference" as the psychologists term it.

The first step, then, towards good housekeeping is to hammer out a common perspective about it. The interest of everyone must be aroused. A committee with wide representation is one good method of involving a lot of people in responsible decision-making and action.

There are many fronts on which this action may be needed. A general "spring clean" may be the first step. This can be heralded by notices announcing a special week for turning out old cloths, grease rags, broken tools and junk. Is surplus oil being allowed to drop on the floors? And does waste accumulate on top of the oil? Are nails protruding from packing cases; has anybody studied the safe height to which different kinds of materials may be stacked, and when were hand tools last checked for efficiency?

Finally, is the overall layout of the machinery in the department such that even if this kind of clean-up has been effected successfully the next production flow will inevitably re-create its own confusion?

The urgency of the need for such an immediate upheaval in our factories and workshops is underlined by the recently published Report of the Chief Inspector of Factories for 1955. Accidents arising from "stepping on or striking against objects" show a persistent increase from 1952, which was largely paralleled by an allied cause—"persons falling".

The Chief Inspector says this is a problem which requires urgent attention. Increased volume of production has led to congestion of factory space and the more goods, articles or persons there are on a given floor space the more chances there are of stepping on or striking against objects with consequent injury. "I am aware", he says, "that I am not stating anything new—stressing the importance of order and tidiness, but I have no hesitation in putting it as 'Number One' on the list of priorities in accident prevention."

The Accident-Prone

It is also true, however, that some people are more likely to have accidents than others (see last month's "Point-Counter-Point" for a description of an interesting investigation which has just been made on the accident-prone personality). Where such people are concerned it is not a question of *whether* an accident will take place, but merely *when*.

Apart from the emotional factors in accident proneness, there are other features which can be objectively measured. People vary greatly in manipulative dexterity. (Individual times for doing a well-known test of this kind vary from 5 minutes to 15 minutes.) Rhythm is another feature. So are visual acuity and reaction time. For example, I am regularly driven by someone whose reaction time is obviously very different from my own. My foot is pressing an imaginary brake pedal at least two seconds before he slows up for the red light ahead and only years of repression prevent me from uttering primitive cries of warning! But we always draw to a standstill on time.

A letter from a foreman in the North of England is very much to the point here. He says "You ask (in the December issue) how I tackle accidents in my department. I agree that people cause most accidents. *So I watch my people* when they are working—especially the young lads. I personally show them the right way to go about their jobs. Some are a lot more awkward than others, and if they don't improve I try to pass them on to some other part of the works because there are a lot of hazards in my department."

I heard of a personnel manager who adopted a similar practice to this foreman. He made a point of watching employees when they were playing as well as at work. One day he was watching a group of new recruits playing a game of cricket. He noticed one of the men was particularly clumsy and often dropped the ball or missed it altogether. His interest was aroused and he persuaded the man to see the works doctor. He was found to be very short-sighted and glasses were prescribed—and so one potential "accident prone" individual was saved from himself.

Other "accident prone" people may not be so easy to recognise. We must continue the research on analysing and isolating the personality factors which are significant, and we must press on towards learning how to recognise these traits in individuals. Some preconceived ideas may then be found to go by the board. There is encouraging news, for example, this month about epileptics—a group of handicapped people who have up to now been considered to be "bad risks". A report published by a pioneer venture, the Veterans' Epilepsy Rehabilitation Service of Los Angeles, California, states that in 1955 no serious accidents occurred in their workshops either with or without seizures, although 52 pieces of equipment capable of inducing injury were in constant use.

I want to thank the many people who have written about the role of the personnel manager and I intend to devote all my space to their replies next month.

Planning and Tidiness Promote Easier and Safer Building

By J. A. HAYWARD
Chief Safety Officer, John Laing and Son Ltd.

An expert shows how the Chief Factory Inspector's criticism of safety practice in the building industry can be met.

"THE upward trend in the total number of accidents reported from building operations continued. The increase over the previous year amounted to 5 per cent. There is a small, but not significant, increase this year in the number of fatal accidents."

This is the opening paragraph in chapter ten of the last annual report of the Chief Inspector of Factories (for the year 1955) which has recently been published. The report further says:

"After making due allowances for the fact that the standard of reporting is improving year by year, thus increasing the known as against the actual number of accidents, there is no doubt that the building industry as a whole is not facing up to its responsibilities in the matter of accident prevention."

Everyone in the industry must be concerned that such a criticism can be made by Sir George Barnett. I do not think however that the position is quite so black as it appears to be painted. Whilst the total number of fatal accidents has increased over the preceding year, it is less than the average over the past six years and this despite the fact that over that period there has been an appreciable increase in the number of workers employed in the industry; in fact, from 1951 until 1954, there was a steady decrease in the total number of fatal accidents each year.

The number of fatal accidents may be a more reliable guide in assessing the progress of accident prevention than the figures for the total number of accidents reported, for the report itself says, "inspectors generally are of the opinion that many notifiable accidents are still not reported". On the other hand, all fatal accidents are recorded.

The criticism that "... "Developments in accident prevention in the building industry were mainly restricted to the larger firms", surely is not a condition peculiar to our industry. *I have visited many firms engaged in engineering and other processes, both large and small, and, quite frankly, considering the nature of the work done, have been appalled at the conditions of the premises and machines and the apparent lack of safety consciousness at all levels in many instances.*

The author delivers a safety lecture to John Laing employees.

It is true that up to the moment the London Building Accident Prevention Group has not been able to recruit the small firms as members, but again, I ask, is this not also true of the ordinary accident prevention group? I have visited and talked at group meetings all over the country and would say that at every safety group meeting small employers are conspicuous by their absence.

Many people in the building industry are conscious of its shortcomings in matters of safety but I predict a great surge forward; in fact this has already started. The London Building Group now has a paid up membership of almost 100, with an influence which is rapidly increasing. It has for two years been training apprentices and young people in accident prevention; monthly meetings have been given for these youngsters at the safety centre, Horseferry Road.

The Building Employers' Associations are also rapidly increasing their work in the field of accident prevention. In all parts of the country, week-end training courses are being held for general foremen. All these are now including a session on accident prevention and the building regulations. By this training, much will be accomplished.

The London Master Builders' Association has an active Accident Prevention Committee, with representatives from the Royal Society for the Prevention of Accidents, the Factory Department and the London Building Accident Prevention Group. This committee is shortly calling a conference and hopes to get an attendance of well over 500.

The Ministry of Works, through its technical advisory service, regularly promotes meetings for all grades of workers and supervision and, during the past year, those on accident prevention and building regulations have proved to be most popular, if attendances are anything to go by. Many of these lectures have been, and are continuing to be, held in technical colleges, with apprentices present. In this connection, in some of the City and Guild examination papers, questions are being asked about the building regulations.

How are individual employers facing up to their responsibilities? Perhaps some of the steps taken by my own company may provide the answer. First, all workers joining the firm are given a small booklet entitled *In The Team.* This, very briefly, outlines some of the points we consider to be most important in the reduction of accidents. It is written in such a manner that it can be easily read and understood by everyone.

Safety film shows are arranged from time to time on all our sites and factory inspectors are asked to attend these. The films are followed by a short talk and questions are answered by members of our safety staff and the factory inspectors. These film shows and meetings prove to be of great value. RoSPA posters are used whenever suitable and pamphlets are inserted into pay packets

from time to time. Functional lectures are given to foremen and slides are shown at these.

We have a staff of full-time safety officers who regularly visit sites. Their duty is to report defects in scaffolding, plant, and advise generally on the safe conduct of work. They fill in a report form at the conclusion of each visit, which is handed to the site agent. In addition, each week they make a summary of defects they have found, which is sent to the visiting manager, with a copy to the superintending safety officer at Head Office. This ensures that if defects are not righted, or full co-operation given, the matter may be given prompt attention. All full-time safety officers are functionally responsible to the superintending safety officer. This point is of particular importance.

All serious accidents are reported immediately, to the superintending safety officer at Head Office and investigation is undertaken to find the cause, with a view to preventing a similar occurrence.

These points are just a guide to a few of the things we consider important, *but the most important of all is the constant call for advice from all sections when tendering or planning contracts. Without this, we would only be chasing shadows and could never really be effective in preventing accidents.*

Having dealt briefly with some of the criticism and given some measure of answer, perhaps we could now examine the main causes of accidents in our industry. It should be clearly understood at the outset that we recognise we have a bad record, especially in regard to fatal accidents. At the same time, it must also be understood that we work under conditions which are peculiar to us.

We have to contend with all the vagaries of the weather—no nice clean airy factory to work in. When we commence work in an open field, this soon deteriorates into a quagmire with the advent of rain or snow. Everything is of a temporary nature, except of course the building we may be erecting.

The labour we employ is constantly coming and going. We cannot choose the locality of our site ; that is done by the client. He also often insists (and this is natural) that we use local labour. This means that even if men are willing to travel (and often they are not and who can blame them), we are mainly restricted to the labour available in the locality. We have to train men into our methods of work and, having done this, the whole process has to be repeated on the next site.

Scaffolds have to be erected ; these again are only temporary in nature and their erection must of necessity be work of a hazardous nature. Just imagine for yourself, erecting a scaffolding in winter—half a gale may be blowing, with the temperature near freezing point, or sometimes a fine drizzle of rain, to make tubes and fittings uncomfortable, if not even dangerous, to handle. It is not surprising that scaffolds are often involved in accidents, due to falls of people and materials. By the same token, working from heights under these conditions may be hazardous for all workmen. In fact, 71 per cent of all fatal accidents in the industry are from falling persons and 7.4 per cent as a result of falling materials.

Of all reportable accidents, 43.43 per cent are from the same two causes. Many of these accidents could and would have been prevented if the building regulations were fully observed. *The main purpose of scaffolding is to assist in the building work and to enable the work to be done safely.* Scaffold collapses, whilst not common, certainly occur much too often and, when they do, are usually spectacular and often obtain a lot of publicity.

This is natural, but by far the greater number of falls are not attributable to collapses. They occur every day and mostly unnoticed except by a few. These are when men fall from ladders because they have only a five minute job to do and it is not worth while lashing the ladder for such a short time. Anyway, they have done it so many times that way and nothing happened. Or someone went on to the scaffold before the guard rail was fixed. Or someone wanted a length of tube or a scaffold board and removed them without permission or regard to the safety of others. These then are the most common causes of accidents and only by constant propaganda and education of workers at all levels, shall we reduce them.

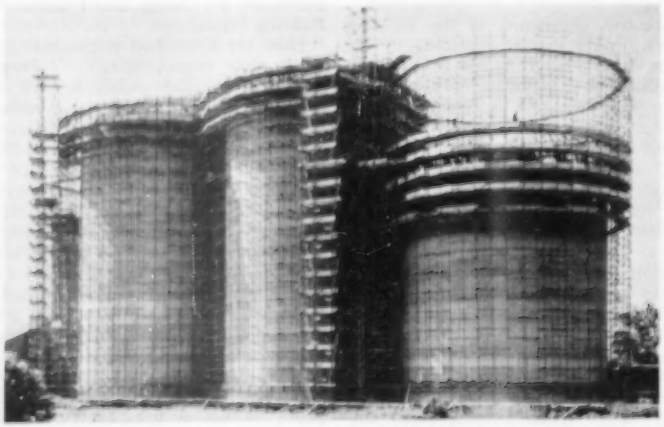
The next most common cause of accidents in our industry is the mishandling of materials, with the percentage of 19.72 per cent of all accidents. These affect the labourer in the majority of cases and most of them could be prevented by proper training in kinetics.

Stepping on and striking against objects account for 8.7 per cent of all accidents ; most of these could be prevented if greater attention was given to general tidiness.

No one in the building industry can afford to be complacent about our accident rate. I hope, however, that I have shown we are more aware now than many people give us credit for, and, from that awareness and awakening interest in accident prevention, I hope will come a reduction of our accident rate, so that in the near future it will be said, despite their peculiar difficulties, the building and civil engineering industries are setting an example second to none.

"We must give first priority to the waging of an all-out campaign aimed at reducing the number of accidents in our industry. Accident prevention is a matter largely within our own control and I hope that never again will it be possible for the Chief Factory Inspector, in his Annual Report, to be able to say—as he has said with considerable justification—that in this matter of danger to life and limb the building industry as a whole is not facing up to its responsibilities."

Mr. Leonard Walden, president of the National Federation of Building Trades Employers.



Construction of sugar silos emphasises how scaffolding both speeds building and helps to prevent accidents.

Practical Instruction for Office Managers

The last article of the series gives details of a syllabus for developing office managers. Such courses should combine the twin aims of teaching scientific method and broadening the individual's outlook.

MEMBERS of management courses fall into three groups:

1. Selected supervisors who have "come up the hard way".

2. University graduates (or those with equivalent qualifications) who have been recruited at a point some way up the ladder (not necessarily an easier way up).

3. Existing managers who are ready for further development.

Every management course should be designed to broaden the outlook of its members, i.e. they should be made more sensitive to the signs of existing or incipient problems, and they should extend their repertoire of responses to these signs as a result of the course.

During discussions every participant is both teacher and learner, and experience has shown that considerable broadening of outlook is achieved when people from all three groups are included in the same course. As views are exchanged and experiences shared, new perspectives on each other's problems and new ways of coping with them are developed.

The main disadvantage of including people from all three groups on the same course is that the different backgrounds of the participants almost inevitably make some of the topics studied seem elementary to some of the members. But with good instructors who can awaken active interest in their classes this disadvantage is outweighed by the advantages of mixing the groups.

It is widely agreed that management training should aim at the dual objective of making existing managers more effective in their present jobs, and preparing them for greater responsibilities. Its scope is so vast that even the largest industrial and commercial organisations find it no easy matter to provide all the training required, and most organisations find it advisable to use courses arranged by institutions which specialise in management training.

These courses, however, can cover only general management subjects, such as economics, accounting, costing, law and psychology. To these are often added practical training in the principles of planning, organisation, co-ordination and control, and exercises in solving particular problems of management.

By J. N. GIBSON, B.A., LL.B.
Training Officer, National Coal Board

But the application of this general training to the management problems of a specific organisation calls for internal courses to ensure that a definite line of action will be followed in day-to-day administration and in dealing with crises when they occur.

To a large extent the establishment of internal courses, their content (which will depend partly on what external courses are attended), and the approach to management which they inculcate fall within the area of policy. But their function should be to act not only as a channel of communication downwards from top levels, but also as a forum in which all levels of management can air their difficulties and thrash out their disagreements.

These courses should cover personnel policy—wage and salary structure, incentives, conditions of service, job evaluation, employee services, recruitment and training policy and methods. The responsibility of management for training right down the line should be pointed out, and the importance of following up all courses

THE OFFICE OF TOMORROW?

Our picture shows the Ferranti *Pegasus* computer with a modern office in the background. Courses in how such machines work and what they do may one day be a 'must' for office managers.

by refreshers and practical work under supervision should be stressed.

The firm's purchasing policy and organisation, and its relations with suppliers, as also its marketing policy and organisation and relations with customers should be surveyed, together with its relations with the Government and external organisations, and its labour relations.

Explain Finance

The economic basis of the firm's operations and its financial administration should be explained in non-technical terms—the financial executive or accountant attending the course will learn how his colleagues think about financial work, and this knowledge will make mutual understanding and co-operation easier. The latest final accounts and balance sheet should be analysed (here the accountant in the group will be called upon for expert comment), and the tutor should satisfy himself that they have been understood. Costing and other control devices as applied within the firm should be examined and discussed.

Leadership skills—interviewing, conducting a meeting, bringing about changes smoothly—should be dealt with in ways adapted to the firm's requirements. There are subtle differences between firms in these fields, but the general principles should have been covered by each student in an external course in management before he attends the internal course. Information services, both incoming and outgoing, should also be thoroughly examined at internal courses, as management is largely dependent on these services for the effectiveness of its relations with the public.

Some account should be given of any research and development work which is being carried out, and any changes in production methods which are being contemplated as a result could with advantage be described. It is generally true that looking into the future in this way will awaken interest more readily than concentration on the past, e.g. on the results of former research. Nevertheless some historical perspective can be helpful here, as it is in dealing with the firm's policy and organisation.

What methods of presentation are most suitable for internal management courses? *There is strong evidence that visual presentation is least effective with groups which are well above the average in intelligence and attainments.* Simple pictorial presentation will therefore probably add little to matter which has been well put over verbally to management training groups. The same would apply generally to film strips and to films, with some exceptions for outstandingly well-made ones. But as films date very quickly they should be used with extreme caution at this level.

On the other hand, graphs to illustrate statistical and financial data are usually found helpful visual aids by students at this kind of course. Occasionally however they are found confusing, and a good instructor will satisfy himself that they have made their point before hurrying on with his unavoidably over-full programme.

Problem-Solving

What is needed in management courses probably more than anything else is realistic practice in problem-solving.

The reason for this is that complex skills (especially mental skills) are learned more by *doing* than by absorbing abstract principles, because significant components of these skills are usually held below the threshold of consciousness. These components cannot be made conscious without considerable effort, and then only imperfectly because human language is defective in expressing what we feel.

Similar considerations apply to other management problems. An attempt to provide realistic practice in problem solving is found in the case-study method, but against this certain serious defects can be urged. It is far more time-consuming than other methods, and if its realism is pressed in its defence, it can be maintained that it is not nearly realistic enough to make up for the loss of time it causes. In real life the quality of decisions is known by their effects. In the case-study this is impossible. To accept the judgment of an expert on the quality of decisions is also unrealistic.

The only adequate answer to this criticism seems to be to remodel the case-study method so as to teach management through the analysis of actual current problems, the decisions taken concerning them, *and their consequences.*

Lectures should be longer and at a higher level of abstraction than talks given at induction and supervision courses. Stress should not be laid on their factual content. The facts needed for the course can be obtained from books and reports, etc.—a reading list should be furnished to every member before the course in time for them to cover most of the publications recommended. The lecturer should concentrate on building the facts into a logical structure, developing an argument and drawing conclusions that will provoke discussion. *Every member of the course should know in advance that if he has not done his reading the lectures won't make up for it.*

Written assignments involving research and a report back to a tutor and the whole group are valuable in showing up the weaknesses of individuals, helping to develop an original approach, and providing an exacting exercise in communication. Visits to offices, factories, etc., may form part of the research required, but if not they should be arranged separately. They are important aids in broadening a man's outlook.

The deep influence of an understanding of scientific method and appreciation of at least one of the major arts on the effectiveness of managers in their jobs should not be overlooked. These are wide subjects and can only be touched on here, but their significance in this context is that they take part in the process of extending mental horizons.

Without an understanding of scientific method a manager will tend to be more credulous than he has a right to be; without an appreciation of art he will tend to lack sensitivity to human values. Some courses in management (especially in America) include these subjects by name, and aspects of them not infrequently come up in discussions.

Towards the end of every management course a free discussion period, or "open forum", earns its keep by filling in gaps—different people find different gaps, and no course can cover everything—and by providing an opportunity for evaluation. A continual improvement in the quality of training can result from a critical assessment of contributions to the open forum.

(Series concluded)

Internal Training for Office Managers

1 Such courses should explain all facets of the firm's business, notably finance, research and development.

2 Avoid too much visual presentation. High I.Q. groups do not need so much.

3 Teach problem-solving through case studies of actual current problems.

4 Do not be afraid to give abstract lectures. Management trainees need training in logical thinking.

5 Hold an "open forum" at the end of each course.

A Letter to New Supervisors . . .

Mr. Alan Bird, a personnel manager of Wellington, Somerset, is trying to put over some management training points in a lighter vein. Here is the copy of a letter he sends to newly-appointed supervisors which offers advice on human relations.

MR. A. MAXIMUM PRODUCTION has just been promoted and made a supervisor of a department. He is just a little bothered, bewitched and bewildered by the task that he has been given, and so, as he has often done before in times of crisis, he turns for advice to his faithful friend, Silas.

My dear Maximum,

How thrilling it was to learn of your promotion. I can quite understand, however, that you feel a little nervous as you begin your new job, but try not to worry, for I will do everything I can to help you. I remember offering to help your cousin, Minimum Effort, when he entered the Cabinet. Alas, he refused my offer, and failed so miserably in his work that even the Prime Minister had to resign. I am not sure what happened to him after that. I believe that he committed suicide or ended up in the House of Lords. At any rate, it was a sad end! The moral, as you will see, my dear Maximum, is that although you must stand on your own feet, never be too proud to accept good advice.

What does the management require from you? — Leadership, Maximum, Leadership! I well remember your third cousin twice-removed who was affectionately known by his friends as Ethelred the Unsteady. Shortly after gaining his Master's certificate he was given charge of the s.s. Cupidity, a fine vessel belonging to the Greedy, Grab & Snatch Line. What Ethelred could do to that ship was nobody's business, which was just as well for Ethelred. One day a bottleneck developed in the boiler room, which caused no end of a "stink" on the bridge.

Instead of dealing with the situation through his mates (a fine touch that), Ethelred rushed straight to the boiler room and picked up a shovel. The day might well have been saved, as well as the ship, if during Ethelred's absence from the bridge it hadn't run aground beneath Beachy Head in the middle of August Bank Holiday, just when young Mr. Greedy and Miss Snatch were picnicking on the cliff top. Needless to say, Ethelred lost his job and was forced to join the panel of "What's My Line?" . . . which brings me to my point:

Why You Were Chosen

You were not chosen to be a supervisor solely because you had a good knowledge of the work; several other men, as you admit, knew as much as you did, and were good workmen. You were chosen because you were observed to be a potential leader. Now you must prove that this judgment was correct.

You are a supervisor now, so be a Supervisor! You are not paid to work at the bench, or to do other people's work for them. You are paid to organise—may I be permitted a pun—maximum production. You are there to evoke the loyalty of the employees to yourself and to the company.

Your strength of character, honesty of purpose, and ability to accept responsibility will be tested. You must be able to see the important among the unimportant, to remain calm in the face of all provocation. As circumstances change, you must be willing to change your ideas, to adapt yourself to new situations. You must be able to maintain good discipline and yet not lose your sympathy and understanding of human nature. You must maintain accurate records, and learn how to use them. . . . Above all, Maximum, rise to your new responsibilities and be a Leader.

Finally, remember that you are now part of management, and act accordingly. So many men fail here. They still identify themselves with the operatives and fall into the trap of still being "one of the boys". When your Cousin Minimum was a young man and had just been promoted head of the department, he found his men doing rock 'n' roll one day. Now if there was one thing Minimum hated, it was to be unpopular, so instead of putting his foot on it, he put his foot in it.

"I wish you wouldn't do that, boys", he said mildly, "*They* wouldn't like it."

"Who wouldn't like it?", said a chap called Bill Sykes, menacingly.

"*They* wouldn't."

"Who wouldn't?"

"The Management wouldn't", faltered Minimum.

"Want me to call a meeting of the shop stewards?" threatened Bill.

"Well, you weren't doing it right."

"Wasn't doing what right?"

"Rock 'n' roll", replied Minimum, neatly turning the subject.

"Show us then", said Bill.

"All right", replied Minimum, "Now you watch me." Whereupon he proceeded to give a classical rendering of "The Green Door". It was, perhaps, unfortunate that Mr. Angus Peabody, the managing director, entered at this point, which accounts for the fact that Mr. Bill Sykes is now in charge of the department. It was after this very disappointing experience that Minimum left the hurly burly of industry for the quiet backwaters of politics. . . . Always identify yourself with the management, Maximum.

Now do take my advice, won't you? I shall be writing to you again shortly.

Until then, I remain,

Your affectionate friend,

SILAS.

CASH YOUR IDEAS!

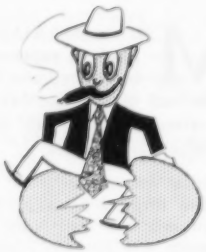
The Editor cordially invites all readers to follow Mr. Bird's example and send him details of any new technique or gimmick used to improve human relations in the firm concerned. All contributions published will be paid at our usual rates for features. The field is wide: ideas on safety, health, welfare, canteens, productivity or human relations in general will be welcomed.

The 'PROFESSIONAL NEUTRAL' in American Labour Relations

By MARGARET BROWN

THE EGG-HEAD COMES OUT OF HIS SHELL

A British management lecturer making a study of management/labour relations in the U.S.A. tells how university dons over there now enjoy great prestige among both sides of industry. As "professional neutrals" they are playing an important part in judging industrial disputes. It is a development all the more remarkable when it is remembered that a few years ago the intellectual was regarded as an "egg-head" by many Americans and as such an object of suspicion or fun.



THE head of the Industrial Relations Department of a mid-western university and I were standing on the campus watching the students' spring carnival when he turned to me and said: "You know, I am a professional neutral and I like it that way". Perhaps it was the bright spring sunshine or the swiftly moving colour of the carnival which heightened my awareness, but these words of his cleared some of the haze away from my picture of American industrial relations—some of the pieces of the complex jigsaw clicked, as it were, into place for me.

I was on a tour of the industrial mid-west. I had already talked to many industrial people, some representing the views of management and some of labour. Labour spokesmen had emphasised that it was their job to fight management; management had often spoken with pride of strikes they had defeated, and of "tough" lines they had taken. Strikes were still often accompanied by violence I was told; one man killed and six wounded in a recent local strike was quoted as a typical example. Firms showed their strength and success by driving a hard bargain with equally strong and successful unions. A firm was more likely to ask for union co-operation if it was in difficulties than if it was successful. I asked one manager if he consulted with the local union agent or the shop stewards before he made changes. "No", he replied, "I might *tell* them what I was intending to do—or do it anyway; they can always complain through the grievance machinery." The two sides seemed sharply divided and clearly defined, though mostly playing the game of negotiation fairly and honestly according to equally well-defined rules.

In the course of my tour, however, I had met and talked to some other people as well. I had noticed that these men were respected by *both* sides of industry. They appeared to have a great deal of scope and seemed to be receiving generous grants of money, from many different sources, to enable them to carry on their work. The words of the industrial relations professor put in a nutshell my half-formulated thoughts about these people. Of course that was *just* what they were — "professional neutrals", making their living and gaining their prestige and power from *not* entering into the industrial relations fight. They remained as umpires or as well-informed spectators (do *these* onlookers see most of the game?).

A Growing Practice

The "umpire" is a neutral who makes his profession out of arbitration. In this country "the contract" is signed between individual managements and the appropriate trade union. It is negotiated for a set period of years and then becomes the all important document which regulates all relationships between management and workers, until a new contract is negotiated and signed. It has become a growing practice for the contract to call for a professional arbitrator or group of arbitrators to settle any dispute arising out of the contract, which has gone through all the steps of the normal grievance procedure.

In 1953 a survey showed 89 per cent of all contracts contained arbitration provisions. A minority of contracts allow arbitration to provide for changes in the contract itself. Thus, "the contract" represents the legislation of an industry and the impartial arbitrator the judiciary. Sometimes a particular man is appointed as arbitrator and serves the same firm for a number of years. For example, Dr. Harry Shulman Sterling, Professor of Law at Yale University, was accepted as an impartial arbitrator by the *Ford Motor Company* and by the United Auto Workers Union. Professional arbitrators have several professional bodies such as the American Arbitration Association to which they may belong. As a body of

men they depend for their continued use and popularity on maintaining the strictest impartiality, although most arbitrators could cite individual cases of difficulty. Industrialists are proud that the verdict of the arbitrator is *voluntarily* accepted as final by both parties, and the faith of either side could be quickly shattered when tempers are running high if many arbitrators were felt to be biased.

Another group of professional neutrals work in a different part of the industrial field, but are equally respected and given a very wide field of work by both management and labour. These are the research workers, sociologists, psychologists, economists, belonging to universities and research institutes throughout this country; they are gathering an ever increasing volume of evidence about people and how they behave individually and in groups. Their research tentacles reach out in every direction and to me, an outsider, they appeared to possess an astonishing amount of freedom to investigate even the most controversial matters.

Managements and unions are equal candidates for investigation. One writer describes unions and union members as "undergoing a severe period of analysis under microscopes". So we have studies about how union organisers operate, studies of strikes, studies of the United Mine Workers Union, and so on. Two recent studies, for example, show that some unions still maintain the traditional pattern of being dominated by strong characters who retain their position as long as they get results.

What makes a successful manager, relationships within organisations and groups, the effects of automation, labour turnover, the validation of psychological tests, are just a few of the studies of management problems which are currently on the stocks in the few mid-Western Universities I visited. Research writers in one University are concentrating on studying group behaviour, not only in industrial groups but in groups of children, and in groups especially collected together for experiment. The relationship of industry to the local community is being studied from different angles by other research writers. Where, for example, does the labour supply come from when an industry moves into a new area, what effect has a strike on the local community and so on. The research workers are respected because they are believed to be impartial. As a report on a study of the United Mine Workers of America puts it: "Most of the miners seemed eager to have their views reported to the 'outside world' by university people whom they consider to be unbiased."

These research workers often have university appointments and combine their research activities with teaching duties. Other university specialists devote their whole time to teaching in the human relations field. Again, both sides of industry are catered for through the courses they run. Business schools have existed for a long time at many universities in this country, but since World War II new Departments of Industrial Relations are being established at an increasing number of universities. These cater for the needs of graduate students, for a wide variety of management, and, increasingly, for different ranks of trade union members from national organisers to the rank and file worker.

Tailor-Made Courses

These departments have grown in a variety of ways. In some instances the State Universities have been asked by the local trade unions to supply courses for worker education on the grounds that the universities are supported by public funds and so should serve the educational needs of workers as well as of various specialists in the management field. The University of Illinois, for example, has a body of specialists who provide a graduate course in labour and industrial relations, a variety of part-time courses or conferences for management representatives, and an extension scheme which takes education (if necessary by a special university plane) to any trade union group in the State which asks for a course. The courses are "tailor made" for each group and often cover the severely practical aspects of trade union work ("bread and butter courses") such as collective bargaining, job evaluation, incentive schemes, grievance procedures and how to chair a meeting.

Sometimes the same course is given first to management students and then to trade unionists. A recent course on Arbitration, for example, was arranged on a residential basis. Managers attended first, finishing by lunchtime on the last day. They overlapped with incoming trade unionists for lunch. After this the professors started the identical course for the worker representatives. Other older established business schools at private universities such as Harvard have recently started courses for trade unionists. The Harvard course consists of two 13-week courses a year for full-time career union officials. Roosevelt University in Chicago, just 10 years old, sets out to give education for any students who desire it, irrespective of race, religion or colour. In 1952 another experiment was sponsored by the Ford Foundation for Adult Education, when eight universities which already had established courses or management students were given funds to set up courses to educate workers in the three fields of "foreign affairs, economics, and community participation."

Since research work and teaching often go closely hand in hand, the sociological and psychological evidence can be presented "straight" to both sides of industry by a sociologist or psychologist who has probably been associated with the research project from its inception. Often professors find they are asked to teach different subjects to different groups. One professor told me, for example, that the trade union groups often wanted to hear about their own history or about economics, whereas the management groups wanted to hear more about collective bargaining! Often the professor is given a completely free hand. One professor is teaching what I feel to be a revolutionary method of leadership to supervisors in one large firm. When I asked him if the top management had asked for this particular type of training, he replied that they had known they were short of executive talent and had told him to get on with the job of training supervisors in the way he considered best.

So we have a picture of a large body of men, respected alike for their impartiality and neutrality. Are these "professional neutrals", in this capacity of judges, research writers and teachers, one more example of the checks and balance system which is so marked a feature of American political life? When management is tugging hard one way and labour is opposing the pressure with all the strength in its power, this body of respected and influential men is helping to keep the balance and maintain American industrial relations in a healthy state. The more they can maintain their neutrality the stronger these professionals will be, and "they like it that way".

People at Work

Local Youth For Future Managers

A NEW scheme launched by one of the biggest industrial linen hire organisations in Britain offers comprehensive management training to hand-picked young men, likely to become the top executives of the future.

It is being run by Spring Grove Laundries Ltd., which operate a chain of plants in London, the Home Counties and the Midlands. Salaries are paid during training, and there is "no limit" to the top salaries that might eventually be achieved, according to Mr. Roger Nias, a director of the company, who adds, "Our scheme is very similar to the trainee manager schemes that have been run for many years by leading commercial institutions.

"Many youngsters are deprived of the chance to take part in existing schemes because they cannot uproot themselves completely from their homes. Our scheme is designed specifically to provide local opportunities for these people in a rapidly growing industry."

The type of young man who will qualify for a management scholarship will be between 18 and 22 years old, educated at a grammar school up to General Certificate of Education standard, and either completed or exempt from National Service. There will be no entrance examination; just a selection board to choose the trainees, and although the scheme is mainly for boys, girls are not debarred.

Holidays by the Year

A NEW holidays-with-pay scheme for its staff has been introduced by Ethicon Ltd., Edinburgh. The length of holiday to which any Ethicon employee is now entitled depends on the number of years of service and on the "authority level" with the company. Hourly paid workers, for example, are entitled to two weeks' holiday per year with three weeks' annual holiday after ten years' continuous service.

The company has at present approximately 350 employees, of which about three-quarters are women, and the new scheme has been favourably received by the whole staff.

Home Reading for Workers

"THE legitimate stage had better look to its laurels" was the comment current when talking pictures made their début. The same might be said today, with a little more justification, of television as an educational medium now that the average worker is able to make use of the *Take Home Books Service*. The service, by bringing out every fortnight a new, specially written booklet covering a particular aspect of modern life and progress, aims to provide all levels of workpeople with some instructional reading on the world around them and their place in it.

The topics range from the cost of living and taxes to careers opportunities, from automation to amateur gardening, and each booklet is bright, concise and readable. To add to the colour most of the authors chosen are not only accepted authorities in their own fields but are household words to the average viewer, listener and reader of the popular press. Names like Graham Hutton, Ralph Wightman and Dr. J. Bronowski stand every chance of gaining the worker's confidence, and thus of realising the service's avowed objects of making workpeople alive to the complexities and opportunities of the world today, stimulating personal and team endeavour and improving industrial relations by showing the reader his own importance in a fast-changing world.

Subscribers in industrial management are provided with special racks where quantities of the booklets are displayed. The employee merely helps himself, and it is hoped, settles down that evening to a quiet half-hour of getting things into perspective. Television could do this just as well of course, but since it exhibits a certain shyness to the problem, the Take Home Books are all the more welcome.

(Enquiries to Newman Neame Take Home Books Ltd., 390 Euston Road, London, N.W.1. Telephone: EUSton 1668.)

For Office Executives

A CONFERENCE for executives with office management responsibilities is to be held this month at the Hydro Hotel, Peebles. The conference is being organised by the Glasgow and West of Scotland branch of the Office Management Association and is open to all its members and subscribers and to delegates from industry and commerce. "Selection, training and promotion in the office" is the theme, and dates are: Friday, 26-Sunday, 28.

WELFARE WRIT LARGE

WAGE costs are going up; but other labour costs are rising even faster. A recent survey of 1,000 companies by the Chamber of Commerce of the United States showed that firms spend an average of 819 dollars per employee each year on fringe benefits—pensions, paid holidays, social security, etc.

The actual payments made varied widely among the companies surveyed and ranged from less than 5 per cent to more than 50 per cent of the payroll. The estimated grand total paid out by all employers was no less than 36,000 million dollars.

Dr. Emerson P. Schmidt, who directed the survey, commented: "During recent years pensions, social security and a host of other benefits have substantially increased both the well-being of employees and the cost of doing business. Vacations, rest periods and other payments for time not worked, have given workers increased compensation for each hour actually on the job." (Business.)

Occupational First Aid

THE St. John Ambulance Association, the St. Andrew's Ambulance Association and the British Red Cross Society already organise first aid courses for workers in industry, and they have now prepared courses in occupational first aid to enable the best use to be made of the men so trained. Certificates will be issued to candidates successful in the examinations held at the end of the course.

The three organisations have jointly sponsored a new authorised textbook, entitled "Occupational First Aid". This outlines the responsibilities and duties of trained first aid workers in industry, and is intended for study by holders of first aid and home nursing certificates.

Full details of the courses and the textbooks can be obtained from the national and local headquarters of the three associations.

Personnel Appointments

MR. A. D. BONHAM-CARTER, a director of Unilever, formerly personnel manager, has been appointed a member of the Royal Commission on doctors' pay under its chairman, **SIR HARRY PILKINGTON.**

MR. B. BUTCHER, organising superintendent and labour manager of Samuel Fox and Co., Ltd., a subsidiary of United Steel, has been appointed a director of the company.

THE DUKE OF NORTHUMBERLAND has been elected president of the Institute of General Managers. Vice-presidents are **VISCOUNT COBHAM, T.D.** (Governor-General designate of New Zealand), **SIR RUPERT DE LA BERE, Bart, K.C.V.O.,** and **THE DUKE OF RUTLAND.**

DR. WILLIAM D. HARGREAVES, M.Sc., Ph.D., Administrative Officer for British Iron and Steel Federation management courses for the past two years, was last month appointed Principal of Richard Thomas & Baldwins' new staff college at Stoke D'Abernon, Surrey. He is expected to take up his appointment in May.

what's Brwin?

The Bartlett "Tea Knapsack" with its capacity of 2 gallons (40-50 cups) is ideal for rapid on-the-spot service.

Industrial Relations and The Loving Cup

By DAVID JUDGE

A cup of tea—the smallest of all welfare amenities, but it can be management's biggest headache. On one side the considerations of economy and speed; on the other good staff relations at tuppence a cup.

THE history of tea in Britain is a long one.

"Here thou, great Anna! whom three realms obey,
Dost sometimes counsel take—and sometimes Tea."

When Pope wrote these words in 1712, tea had already been known in this country for half a century—at the prohibitive price of £6 per lb.

Today the price of the quick-infusion tea served in the industrial canteen is about one-twentieth of that. The price has fallen and demand has risen until at the present time the Englishman is one of the world's most prodigious tea drinkers. Tea has become an institution in practically every aspect of British life and work, and it is for the latter reason that industry, like Queen Anne, now takes counsel—on the most economical and time-saving method of ensuring that each employee receives his or her cup of tea during the working day.

The advice can come from several sources. The manufacturers of catering equipment, for example, are always ready to offer their solution to a teatime problem. Stotts of Oldham, for instance, have a wide range of equipment designed to suit industry's needs and one of their latest products, the "tea point", has been installed in the Sheffield steelworks of Thos. Firth & John Brown to give an on-the-spot service on the shop floor.

The problem of the steelworks is an unusual one; the works are generally too large to allow for one central service point. The employees take their short breaks according to the process they are working on. At an appropriate moment they can take time off for a quick "brew up", but any distance involved would swallow precious minutes from the break.

The installation of tea points throughout the works affords the men a constant source of boiling water at the minimum distance from their work, together with a sink and hot water tap for washing mugs and a suitable receptacle for tea leaves. The boiler operates round the clock without attention and no experienced catering staff are needed. The system is quite simple and unpretentious but it is the complete answer to the problem.

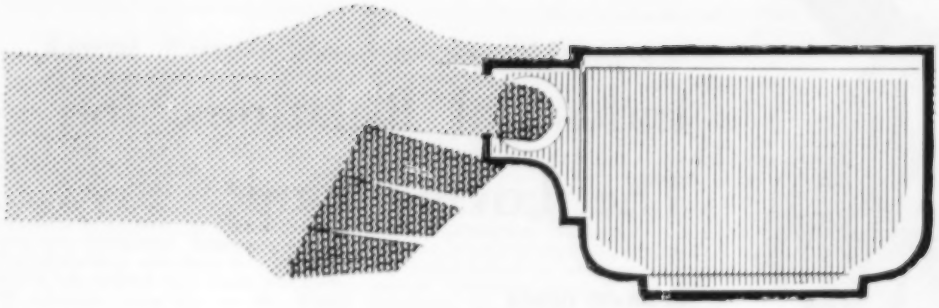
The "self help" service has also been used to meet the needs of Qualcast Ltd., Derby, where tea was needed at all times during the day in an open yard. This meant a ready supply of boiling water without any staff to supervise the boilers. Stotts overcame the problem with two gas heated boilers installed inside the building.

A heavily insulated four tap pipe line runs from each boiler through the outer wall into the yard, where the men can draw off their water into tea cans whenever they need it. The type of boiler used here is completely automatic; both

Every moment an employee spends away from his desk or workbench is time lost to his employer, which is why many firms prefer the trolley system. Tea can be served right at the place of work with no interruption to production.

and used to go home for lunch; they now

. . . . . what's Bruin?



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- *Brewed from fresh tea leaves*
- *Each cup brewed separately*
- *Standardised costs*
- *Labour saving*
- *Can pay for itself within a month*
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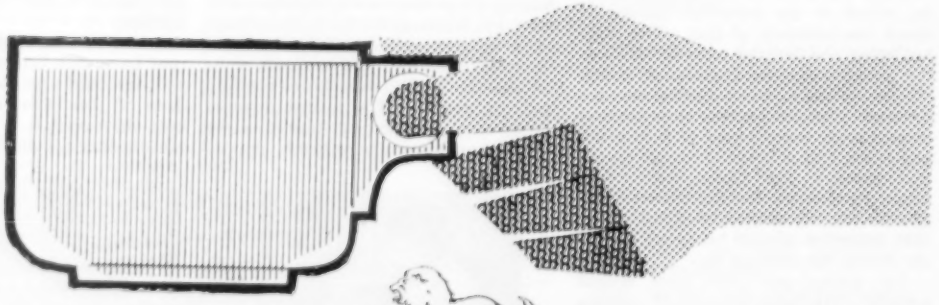
Here are three examples of the Bruin's time and labour saving" qualities:

Factory 1 800 men to be served tea—10 minute break staggered over 40 minutes.
before 10 girls needed.
now 1 girl only needed. Tea service completed in 40 minutes.

Factory 2 250 men to be served tea—all previously went to canteen.
before 2 full-time, 1 part-time girl needed.
now 1 part-time girl only needed. Tea break reduced from 15 minutes to 10 minutes.

Factory 3 4,500 workers to be served tea—10 minute break—all served within 5 minutes.
before 55 girls needed.
now 5 girls only needed.



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A self-help boiling water installation by Stotts in the Coventry factory of Dunlop Rim and Wheel Co. Employees can draw off boiling water for their tea at any time of the day or night.

gas and cold water supplies are controlled by the amount of water drawn off in the yard. Moreover, the fact that the boilers are inaccessible from the yard means that no inexperienced hands can tamper with the system which is thus rendered virtually foolproof.

Its consistency is remarkable considering that, without any supervision, approximately 1,000 pints of water are drawn off every day between 8 a.m. and 3.30 p.m. with a lunch-time peak hour of 400 pints between 12 noon and 1 p.m.

In the case of Lewis Berger (Great Britain) Ltd., the problem was more complex. At their Chadwell Heath paint factory a considerable number of man-hours a week were being lost simply because the men had to walk some distance for their tea. The works canteen had been built outside the main factory across a busy road. Workers who went there during breaks were, through no fault of their own, spending as much as 25 minutes away from their work. Some of the time was wasted by men removing their overalls before entering the canteen—a sensible regulation for cleanliness, provided the time factor is not considered.

By installing a tea bar (illustrated in our February issue) in the main factory grounds, Stotts were able to save the firm 500 man-hours a week. The men could wear their overalls at the new bar, walking time was reduced to a minimum and service was speeded up. This saving is said to have paid for the installation.

When Wall's built their new meat products factory at Godley over a year ago, a number of tea rooms were incorporated independently of the main canteen. Employees go there for their tea breaks, and a number of employees who don't want a cooked lunch in the canteen patronise them during their lunch breaks, drinking tea and eating the sandwiches and snacks which are provided. Some of these employees live in the Godley area and used to go home for lunch; they now find that they have a longer lunch break because of these extra amenities.

The "tea kiosk" is a time saving idea from A.E.C. Ltd., Southall. Indicator lights above help to control the queues.

An added advantage of the tea room system in the case of a food manufacturing firm like Wall's is the essential one of hygiene. Serving employees with tea at their work would increase the danger of foreign matter like tea leaves or even crockery chips finding its way into the product.

Wherever tea is served and drunk at a central point, however, the time factor has to be reckoned with. If a man spends even ten minutes away from his bench or desk that time is lost to his employer, and management is compelled to think not in terms of profits to the canteen (the tea is often provided free, and in any case the works canteen is a welfare facility and not a money-making venture) but in terms of wasted man-hours and wasted money. That is why, wherever the system is practicable, many firms still prefer the method of serving tea by trolley at the place of work.

Some industrial catering advisers, like J. Lyons, advocate this method. The staff needed to wheel the trolleys, they argue, is present already in the canteen where the tea is prepared, and an experienced counter hand can give just as rapid service with a trolley as found in any tea bar. Furthermore few employees, if any, will need to interrupt their work. This is obviously the most sensible system for office blocks, but there is no reason why it should not be extended wherever possible.

Lyons themselves had an organisational problem in Cadby Hall recently—to serve 1,400 workers with morning and afternoon tea. A central tea room was suggested, but since a number of executives and their staff needed trays delivered to their offices, it was decided to keep organisation down to a minimum and to return to the trolley system. Only 24 trolleys were needed to provide a smooth service to the entire staff.

Even with a small staff it can still be worth the company's time to employ someone to serve the tea, rather than interrupt the firm's business. The economy of providing a small staff with tea-making facilities, such as kettle, heating point and teapot, is actually a false one. There has to be somewhere to wash the cups and to dump the tea leaves. If a rigid standard of hygiene is to be complied with, and any employee is justified in demanding this, a constant supply of hot water, if not a proper system of sterilisation, is a top priority. Time is wasted in washing up, especially with the inadequate facilities of the staff washroom, and the work place is permanently

invaded by the canteen to the detriment of efficiency on both sides.

One of the disadvantages of the trolley system is that so many employees think of the trolley in terms of a mobile canteen. Not satisfied with a packet of biscuits with their tea, their ambitions extend to small snacks like cakes or sandwiches. Even the most benevolent of employers will find himself applying a heavy veto when faced with this insoluble problem of distribution.

It is possible, of course, to serve some small wrapped snacks from a vending machine, and nowadays the principle has been adapted to the making and serving of tea. Two machines are available which, the manufacturer's claim, have overcome almost entirely the problem of storing the tea once it has been made, while preventing it turning stale.

Peerless & Ericsson's *Bruin*, the makers claim, makes fresh tea at the speed of one cup every two or three seconds. Simply pressing the cup against a lever triggers off the simultaneous flow of tea and milk, and as one cup is drawn off so another is automatically made. The machine will operate endlessly providing the dry tea magazine is changed and the milk supply replenished after every 225 cups.

The *Teamaka* manufactured by A. Smith & Sons (Woking) Ltd. is designed to boil the water, make the tea automatically, store it hot and add milk as it flows into the cup. Additional supplies of water are available from a separate tap for teapots or other purposes.

In a month or so yet another machine will be in production by Supreme Automatic Vending Co. Ltd., aimed to serve a completely individually made cup of tea, automatically delivering the tea, milk and liquid sugar into a dispensable cup.

All these machines are designed not only to save time by making tea on the spot, but also to control the amounts of the ingredients used and so to control canteen expenditure. Yet many firms do not think these considerations are strong enough to set against the psychological advantages of the tea pot.

The Tea Bureau of Lower Regent Street, London, whenever they are called in to advise upon a tea distribution scheme, are strongly in favour of using a tea pot wherever possible, and, moreover, of letting the customer see that it is used. It is often argued that the British are not connoisseurs of tea, especially in the canteen where the demand is chiefly for the "cup that cheers" and not for what goes into it. There are certainly many subtle blends which are completely unknown to most British tea drinkers, but against this can be set the impressive increase in consumption which occurred when A.E.C. Ltd., Southall, switched entirely to the tea pot system—from 18,510 cups a week in 1947 to 34,319 in 1951. During this time the total number of staff had decreased by almost 300.

Some of the increase in popularity, of course, can be attributed to the organisational speed-up of the new distribution system introduced in 1951. The new method was planned by the works canteen manager, after exhaustive tests with urns. The trolley system used before was time-wasting, and those who received their tea last found it stewed.

To speed up the service, an experimental "tea kiosk" was set up in one part of the works to deal solely with the workers in that department. The kiosk was equipped to make the tea, and, most important, to serve it no later than three minutes after brewing. The immediate result was that workers from other departments gatecrashed to use the kiosk themselves. This was obviously the solution, and fifteen prefabricated kiosks have now been erected at vantage points throughout the works each equipped with one 20-gallon gas heated boiler, a metal counter with wire mesh covered drip tray, six 1-gallon tea pots, a till draw, a service hatch and a tower above fitted with lettered indicator lights.

When the operator is ready to serve the first batch of customers, she illuminates the letter corresponding with that given to a particular work bay. The workers leave the bay, collect their tea and return to their work. Another six gallons of tea are brewed, and the second letter on the rota of bays is illuminated—and so on.

The system which can be spread over an hour or more eliminates the possibility of lost time through long queues and provides the workers with tea as rapidly as they could get it at home. Each kiosk is capable of serving 300 customers not only with tea but with light snacks previously brought from the canteen.

It may be incongruous that so much planning and effort should be spent on the basically simple process of giving an employee a hot, tasty cup of tea, yet the problem assumes greater urgency when seen as a means of keeping one's workers contented and productive, and in these days of works canteen committees that is a fulltime job. If the tea is sold to the employee it costs him about 2d. a cup, and if management sometimes wonders why it spends so much effort on a tuppenny problem, somewhere in the back of its mind is the warning about "spoiling the ship for a ha'porth of tar."

STRIKING TASTE

When 500 miners went on strike recently at a Derby colliery it was primarily to protest against the dismissal of an assistant in their canteen. She had complained to the management at a new canteen ruling that the men's tea was to be made in urns instead of pots, and that sugar was to be rationed to one teaspoonful per cup and two per mug. The men had already registered their disapproval by leaving the tea unfinished on the tables—they prefer it strong and sweet. This may seem no more than a "storm in a teacup" to many people but, as this article points out, a cup of tea can create a tempest in industrial relations.

A tea room at Wall's Godley factory. There is one on each production floor to eliminate queueing and waste of time. Employees also find it ideal for a sandwich lunch.

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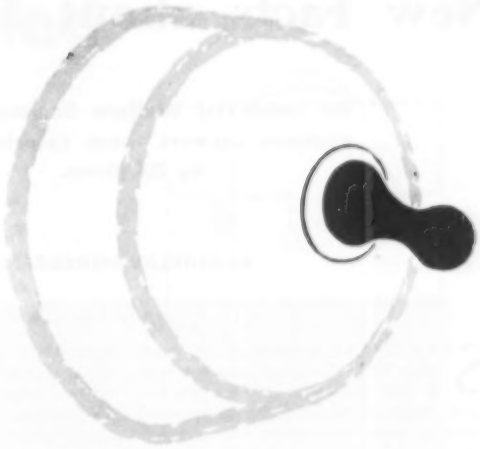

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New Facts about Employee Food Services

An Industrial Welfare Society survey analyses answers about catering given by 200 firms.

By SHIRLEY MEREDEEN

STATISTICS bore most people. But Miss W. McCullough and her staff at the Industrial Welfare Society have, from a wealth of mathematical evidence, made their latest Canteen Survey easy reading both for the layman and for the specialist. Entitled "New Facts about Employee Food Services", it deals with all aspects of canteen management and service in a down-to-earth way and points many a finger to the future.

It is compiled from the 200 questionnaires returned from companies who have, for this purpose, been classified into three groups:—

1. Large—those with 600 or more employees.
2. Medium—those with 100-600 employees.
3. Small—those with 100 or less employees.

Those firms who replied provide, in all, 188,000 meals per day which earn £6½ million in annual income, and represent all types of industry.

Who are the customers?

An average of 32 per cent of employees eat meals in the canteens provided for them. During 1956 these people spent an average of £1 10s. 0d. per month on such meals and cigarettes.

Factors which reflect changes in employees' eating habits mentioned in the report are:—

(*a*) Slight changes in menu prices do not affect sales. The main reason determining whether or not an employee will use the canteen provided is whether his wage packet is large enough.

(*b*) The type of worker employed is an important factor in judging the percentage of those who will eat in an industrial canteen. Age and sex reflect on eating habits. So it is that men eat more dinners than women but young men eat more dinners than old men.

Shift workers prove bad eaters except for quickly cooked and fried foods, while part-time workers are good customers. While the demand for main meals varies with the wage packet, not so the demand for tea and cigarettes, the figures for which remain constant.

Staffing Problems

Enquiries into the number of staff needed to run differently sized canteens have proved, yet again, that economies of scale denifitely operate in the large canteen both as regards bulk food purchase and staff.

(*a*) Both large and medium (see definition) canteens require 4½ workers to cater for each 100 meals. (For the word "cater" read all aspects of food preparation, service and clearance.) For the small canteen, however, an average of 5½ workers are needed per 100 meals. These figures include morning and afternoon snacks.

(*b*) To the question "What proportion of your canteen staff are supervisors?" the following conclusion is shown:—

Large canteens employ 1 supervisor per 11 staff.
Medium canteens employ 1 supervisor per 9 staff.
Small canteens employ 1 supervisor per 5½ staff.

Prices

Methods of charging for meals vary considerably. The most popular of these is either the fixed price meal (though this is waning in popularity) and an *à la carte* charge.

All prices, however, are unrealistic in relation to actual costs and comparable charges in commercial restaurants. Prices of many meals have, however, been increased during the year and many firms have introduced the system of price variations in relation to seasonal fluctuations of various commodities. Six out of 10 firms are now preparing a special dish, once weekly, the price of which may be 1/- or more above average prices. This, however, does not deter customers who seem to approve of the idea.

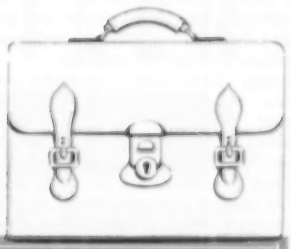
Average prices in London and Home Counties canteens show the following increases:—

	Price in 1956	Price in 1955
Roast and 2 vegetables / or / Fried fish and chips	1/3	1/2½
Soup	3½d.	3d.
Dessert	4d.	3½d.
Tea	2d.	2d.

(*Continued overleaf.*)

Attractive and functional—Gaskell & Chambers' new staff canteen at their Dalex Works, Birmingham. The model kitchen is also a showroom for the various types of cooking equipment they market.

Shepherd's planned and furnished this canteen



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Shepherd's plan, manufacture and deliver direct to customer's orders, tubular furniture designed for canteens-cum-recreation rooms, halls and generally where people gather.

This magnificent example of a recent installation at The General Electric Company Ltd., Wembley, Middx. is just one of many where Shepherd's have satisfied.

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New Developments

Sixty-five per cent. of those questionnaires returned showed some sort of new development, and 26 firms in the past year had installed completely new layouts of kitchens and service counters.

Stainless steel sinks, counters and working surfaces seem to be most favoured. Nine firms equipped new dining rooms for executives, all with waitress service. (One firm experimented with a hot plate for self-service of soups and a table of cheeses and cold sweets, also for self-service. Waitress service was only used for the main course, with the result that wage bills were reduced and executives had more privacy.)

Six firms installed cafeterias in place of pre-plated services; seven new snack bars were opened, a drop on previous years. These tend to be placed right away from the main counters, and three of them are open 24 hours each day selling tea, sandwiches, cakes, sweets, toasted and fried snacks.

Of the five companies who have redecorated their canteens, four have done so in contemporary style, and three new canteens were built by companies not having one before. Four firms made rearrangements of counter and cash desk. Ticket and disc systems have lost favour to the more popular cash register.

Subsidies

Each firm has its own definite and steady policy towards canteen finances. Of those who replied to this question, the management subsidies to:—

21 firms covered consumable goods and wages.
17 firms covered consumable goods and light replacements.
13 firms covered consumable goods only.
8 firms covered consumable goods and a percentage of wage bill.
2 firms covered all costs except rent, equipment and maintenance.

The survey also examined the financial arrangements between management and contractors: of these,

1 firm pays 6d. per meal to the contractor.
3 firms make good all trading losses.
1 firm pays a management fee and an agreed trading loss.
1 firm pays 5 per cent. on all sales.
1 firm pays no subsidy at all to the contractor.

Summing-Up

Effects of industrial recession and short-time working have had their effect on canteens during the year. In motor firms particularly, where there is short-time or a three-day working week, canteen custom has been considerably reduced. Canteen staff have, in turn, had to be put on short time and much redistribution of work and replanning of meals has been necessary. Consequently the increase in expense will, in time, reflect itself in price increases. To counteract losses that are thus being made at this time, some firms are serving pre-cooked and packaged foods. Vending machines, too, are proving more and more popular.

Canteens generally show great signs of overhauling themselves. They are aware of the need to compete for custom, and to give value for money in pleasant surroundings.

A Canteens 'Brains Trust' Meets

A NUMBER of topics of interest to catering supervisors and personnel managers were discussed at a recent "Brains Trust" of the London branch of the Industrial Catering Association. Those serving on the panel were:—Miss Stuart, Factory Department, Ministry of Labour (in the chair); Miss Dally, Personnel Officer, British Oxygen Gases Ltd.; Mr. R. Newberry, Morgan Crucible Company Ltd.; Mr. W. J. Willmoth, Catering Controller, Imperial Chemical Industries; Mr. H. G. Wall, Catering Manager, Rootes Group, Ltd.

The main questions debated were in the following order:—

Should the Canteen Manager be responsible to the Personnel Manager?

In general, the Panel agreed that this was usually a most satisfactory arrangement since it allowed the works manager to concentrate on production. The function of the personnel officer was rather that of a buffer between canteen and management and in that role served a very useful purpose. There was no reason why the relationship should not be workable so long as the personnel officer exercised tact and kept the advice to non-technical matters only.

Staff Turn-over

The reasons for the sometimes relatively high rate of staff turnover were given as the employment of married women, the hard and often dull work, the relatively low wages and poor working conditions. The remedy, it was submitted, was not always in the raising of the wages alone though benefits often resulted in raising to a comparable standard with other unskilled work in the factory. Boredom from the tedium of tasks like washing-up might be relieved by an occasional switch-around of duties. Better lighting, better sinks and equipment could do much to help in improving the working conditions. Dish-washing machines and other appliances designed to take the drudgery out of the more menial tasks not only helped to create better working conditions but played a part too in the reduction of labour costs.

Canteen Committees

The general feeling with regard to canteen committees was that they served a useful purpose when they acted in an advisory and not a managerial capacity. *It was pointed out that the canteen committee should never be allowed to become a complaints committee.* The best way to deal with complaints was to deal with them on the spot. There was the point, however, that members of such a committee had a responsibility of reporting back to their fellows why such-and-such a suggestion was impracticable, or why it had been found necessary to raise the price of a certain dish.

Vending Machines

The place and the future of vending machines in the canteen was discussed at some length. *In the main it was considered that they should be regarded as a complement to rather than as a part of the canteen.* It would seem that some manufacturers of these machines install and maintain them free and pay a percentage commission to the management from the sales, but there was too the point of liability in the case of dud coins finding their way into the machines. Some firms allow the percentage profits from the machines to be donated direct to the sports and social club, and, from the point of view of the canteen, this is bad for it reduces the gross turn-over and, inevitably, the gross profit.

Equal Pay

No one would expect a mixed Panel to agree on such a question. The points which emerged from the discussion in which several of the members took part were: an equality of payment between men and women would inevitably mean that the man, other things being equal, would get the job in preference to the woman. In certain canteen jobs it might be more advantageous to employ men while in others it might be better to employ women. In general, the men felt that certain companies employed women because of the saving from a lower wage; women thought that a position of equal responsibility called for an equality of salary. This is a vexed question: the Government attitude in the Civil Service was cited by the women; the men produced what Miss Stuart termed the "red herring" of family responsibility.

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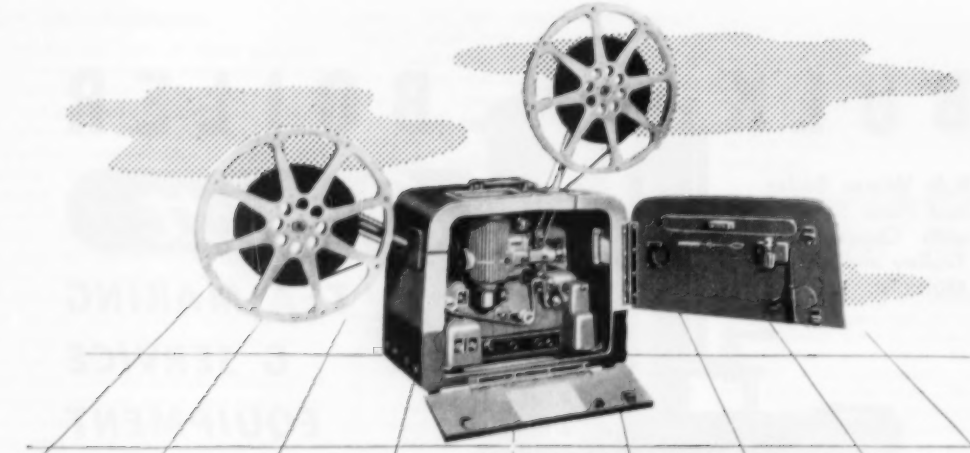

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Today's Ideas in NEW BOOKS ★ NEW FILMS

Post Mortem on Duke's Conference

A LITTLE while ago as befitted the successful conclusion of the Duke of Edinburgh's Conference there was a rash of comment and excerpt for the many who had not had the good fortune to attend. Some of the articles were presented with the knowing smile of a conjurer producing a rabbit out of a hat; that is, when they were not told with an air of sanctity and reverence as though they were incontrovertible truths of profound order.

We are now able to read a coherent comment of the whole Conference written by one person, an observer, and a good journalist. Laurence Thompson has produced something useful, and in this day and age at the price of 5s. 0d. that is something.

This book is not a mere collection of jewels from the speeches. In fact verbatim quotations are mercifully few, and those that are chosen are good. It would be so easy to collect a number of names of the famous and gifted people who were there and append large chunks of their speeches like so many glittering baubles on a chandelier tinkling and scintillating in the rising hot air.

Bemused Hens

Mr. Thompson has a turn of phrase, which readers of the *News Chronicle*, for which he works, no doubt relish, and I suspect that his comment on some of the products of our school education is original and worth quoting: "Many of them (school leavers) arrive at the Universities crammed with their subjects like those bemused hens which one sees in battery cages. It is characteristic of those fowls, I am told by those who know about such things, that if they are put into the unaccustomed world outside the battery they are lost. The present-day student is in the same cage. He knows a great deal about his particular subject, but precious little about the world outside it. He is, in anything but a technical sense, illiterate."

The journalist tends to show through in some parts, notably the little story so beautifully told of "the British Industrialist who complained to one of the Conference Study Groups about the wickedness of Trade Unions. Two hours later the Group introduced him for the first time to, and told him the name of, the Trade Union Leader in his district."

This is much too good to be true, but in fairness to Mr. Thompson he does not use this kind of journalistic coup too often, but has set about the mammoth task of producing a popular version of the proceedings of the whole Conference before the official proceedings have been published, because this is not an interim statement; it is, in fact, his original contribution and one which, it is not too bold to say, will probably be read more than the official volumes.

This is a jolly good thing to slip in as a peace-offering to a business colleague, who sent you a Christmas card, but was unfortunately overlooked when you sent out your own. J. M. BRIDGES.

The Challenge of Change. *Oxford University Press, Warwick Square, London, E.C.4.*

CONFERENCEMANSHIP

How to Win Conferences, Meetings and Interviews. By William D. Ellis and Frank Siedel. *Elliott Right Way Books, Kingswood, Surrey.* 7s. 6d.

THIS book is thoroughly dogmatic. Its chief contention is that a business conference is *not* a forum for the exchange of ideas: it is essentially an argument which somebody wins and somebody else loses, however subtly or courteously this may be achieved.

If the reader is not prepared to accept that premise, the authors maintain, he can leave the book alone. Those who do accept, or are merely curious, are swept on to a justification of the dogma and a demonstration of how to WIN without necessarily being the best man—just the shrewdest.

Conference types. Robert Mowry's illustrations by themselves make this book worth the money.

The secret is not preparation (a man can be *too* prepared) but presentation backed by perspicacity—a quick response to the mood of the listener and a certain opportunism, in its pleasantest sense. This is, of course, not the whole of the secret: even the shrewdest executive will not go far without the basic ideas to present; nor is it quite as simple. The authors are really holding every personnel manager's problem child—that humans are very complex creatures and should be handled delicately.

The Americans (and the authors are Americans) are given to commenting upon the obvious, but their better writers and speakers do it in such a way that one discovers a precious truth without being conscious of its banality. With the growth of psychological analysis over the past few decades we have perhaps come to ignore the obvious, and if this book tells us things we should know already, so much the better, especially since its brisk style makes for easy reading. Can as much be said for many of the current tomes on management techniques?

FILMS . . .

Don't Break Your Back

From Canada comes a film on the handling of industrial accident victims. One of a series on the avoidance of accidents in factories, the film has been made by the National Film Board of Canada for the Canadian Department of Labour and demonstrates the correct methods of first aid for back injuries. Emphasis is laid on the further injury which may result if the victim is moved or propped up in the wrong way. The structure of the backbone and spinal column is illustrated by animated diagrams which show how paralysis may result from injury to the inner spinal cord. With the title **Accidents Don't Happen: Early Handling of Spinal Injuries**, the film runs for 17 minutes. A 16-mm. copy can be hired for 10s. a day.

The Régie Renault Company of France has produced an instructional film (**The Problem of the Centreless Grinder**) on the use of the flow process chart and models to analyse work done on grinding machines in a shop making springs for Renault cars. The film is mainly in colour and runs for 19 minutes. It shows the subsequent improvements made in production and includes the installation of an automatic gauging device, elimination of unnecessary operations and the use, by improved layout of work space, of additional machines. Hire charge is £1 for one day (16 mm.).

Both these films are available from the Central Film Library, Government Building, Bromyard Avenue, Acton, London, W.3.

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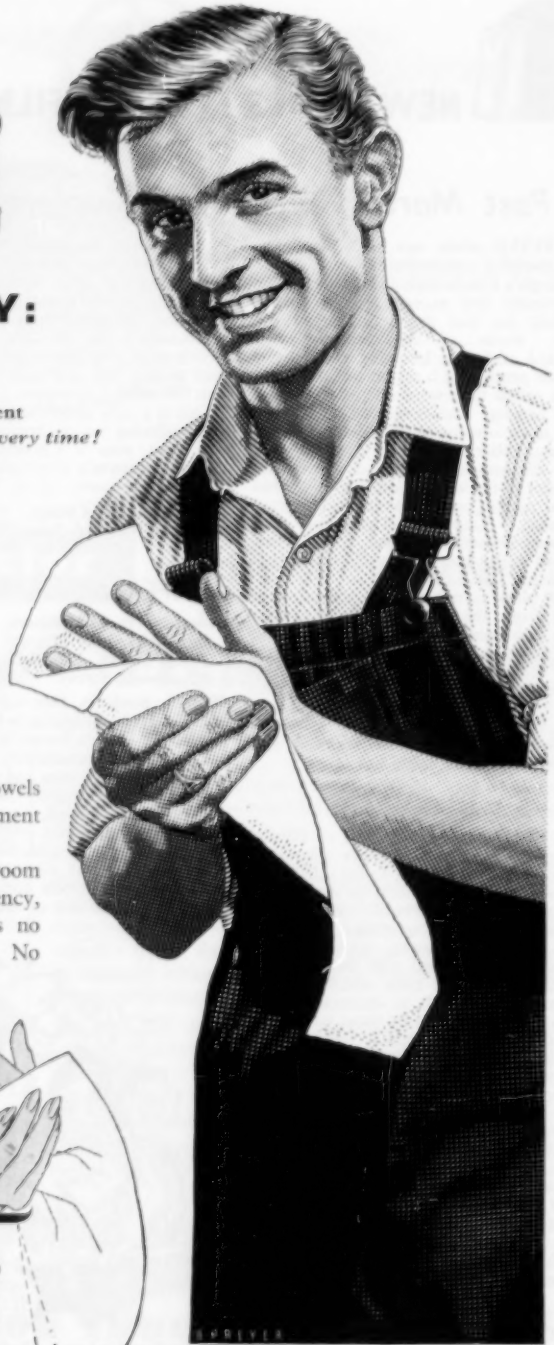

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Housekeeping Aids and Shop Floor Ideas...

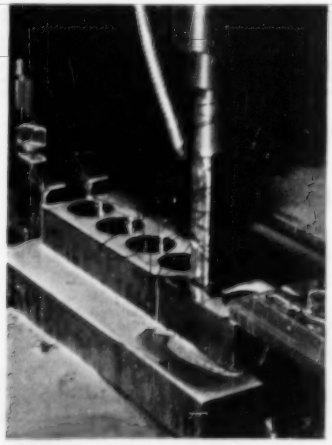
Better Reaming

A NEW machining technique which, if generally adopted, could substantially reduce the production and overhead costs of Britain's engineering industry has been developed by Short & Harland Ltd., Belfast.

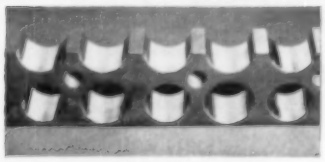
The standard practice of reaming high tensile steels by means of a tool with spiral cutting edges is a laborious method which does not produce holes of consistently high finish. Expensive components are often badly scored and have to be scrapped, while maintenance of the tools is costly and difficult: they may have from four to eight cutting edges, each of which has to be reground individually. Now, after many months of research, Shorts have solved the problem and the new method is in use at the firm for aircraft undercarriage components, wing root fittings and rudder bars.

The new technique is a revival of the old-fashioned gun drill, used mainly for drilling gun barrels and other components with deep and extremely accurate bores. The tool now developed has a single tungsten carbide-tipped cutting edge, supported radially by two stabilising wear pads which ensure that the hole is reamed to consistently accurate dimensions. It represents a considerable advance on the older type of gun drill in that only a single reaming operation is necessary.

This technique, it is claimed, can perform operations 40-60 times faster than standard methods. For example, a hole one inch in diameter and four inches deep can be reamed in just 24 seconds; by standard methods the operation would take 20 *minutes*.



The new type of gun reamer shown reaming holes of 1½ in. diameter in S65 (55 ton steel) at 600 r.p.m. and ·008 feed. The long spiral of swarf seen clearing itself from the hole is an indication of a successful reaming operation. (Below) The remarkable mirror-smooth finish produced by the new method in holes of 1 in. diameter reamed in stainless steel at 1,048 and 1,480 r.p.m. with a ·01 feed.



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THE many advantages of supplementing courses of training and safety instruction with photographic illustrations have long been overshadowed by the one great disadvantage—the high cost of having photographs taken. This problem has at last been overcome by the introduction of a revolutionary "Take-it-Yourself" service which is now available to industry, commerce and other users of photographic prints.

For a nominal fee of 3 guineas a month a firm can be supplied with all the equipment necessary to take good pictures, and the suppliers undertake to train a member of the firm, free, in the use of the equipment. Training takes only a few hours, depending on the aptitude of the trainee. After this the process is simple: when exposures have been taken the film is returned to the suppliers for processing and completed prints are returned in a short time. Large quantities of prints can be run off in under 48 hours, if necessary, at moderate prices.

It is claimed that the service saves approximately £3 a shot, compared with normal costs, and the cost of printing varies between 2s. for half-plate prints to 7s. 6d. for 15 in. by 12 in. prints, with considerable reductions for quantities. The ordering of further prints requires only a phone call.

Enquiries to: Roy Reemer Ltd., 35 New Oxford Street, London, W.C.1. (Tel. COVent Garden 0818.)

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ICI paints division at Slough use polythene linings for paint cans, having found that it saves maintenance time when cleaning the cans.

Faulty fuse finding

If among 180 fuses on this panel one is broken it can be traced in a matter of seconds by the detector device designed by an employee of Dexion Ltd., Waltham Abbey. When the contact arm moves across the corresponding hole on the indicator board, a lamp lights up.

Looking Ahead

This country grasped the lead in the manufacturing age and held it for generations. Today, if we are to hold and add to that lead—in an age of striking scientific developments—we have to think again.

The Government and Industry are investing millions in Universities, Colleges and Schools. But all this money can be so much waste if it does not produce the technologists and technicians. These are the men and women vital to the advance of British enterprise.

To this end, *The Times* has brought out TECHNOLOGY, the monthly review of training and education for industry.

TECHNOLOGY is the journal of an expanding partnership, the partnership between teachers and industrialists on which Britain's industrial future depends.

Through TECHNOLOGY *industrialists* are able to declare their objectives and needs to teachers. At the same time *teachers* are able to explain their aims and difficulties to industry.

TECHNOLOGY provides a bridge across which will flow a constant stream of ideas, comments and opinions affecting the whole field of training young men and women to take their place as technologists and technicians.

Contents of the April issue will include:

Industrial Uses of Fission Products by DR. HENRY SELIGMAN,
Head of the Isotope Division of Harwell

Re-examining Apprenticeship by DR. W. P. ALEXANDER,
Secretary of Association of Education Committees

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Accidents, How they happen and how to prevent them at factories, docks, building operations and works of engineering construction. Vol. 30. January, 1957. *H.M.S.O.* 1s. 3d.

Factory Form No. 692. Chromium Plating Regulations, 1931. Certificate of exemption: General. November, 1956. *H.M.S.O.* 2d.

EPA European Technical Digest. Vol. 1, January, 1957. *O.E.E.C.* 14s. Sold by *H.M.S.O.*

EPA European Technical Digest. Vol. 2, February, 1957. *O.E.E.C.* 14s. Sold by *H.M.S.O.*

Prevention of Occupational Accidents in the United States. Role of the human factor. Project No. 338. January, 1957. *O.E.E.C.* 6s. Sold by *H.M.S.O.*

Scientific Manpower for Applied Research. How to train and use research workers. Project No. 361. Report of 3rd international conference on applied research, Vienna, October, 1956. *O.E.E.C.* 4s. Sold by *H.M.S.O.*

Marketing by Manufacturers. Report of Paris international conference, May, 1956. *O.E.E.C.* 8s. Sold by *H.M.S.O.*

Steel Statistics for Europe. Quarterly Bulletin. Vol. VII, No. 4. *U.N.O.* 7s. 6d. Sold by *H.M.S.O.*

STATUTORY INSTRUMENTS

No. 66. The Wages Regulation (Hat, Cap and Millinery) (England and Wales) Order, 1957. Dated January 16, 1957, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 5d. Sets out statutory minimum remuneration payable in substitution for previous Orders which are revoked. Effective from February 1, 1957.

No. 74. The Wages Regulation (Road Haulage) (Amendment) Order, 1957. Dated January 17, 1957, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 3d. Amends 1955 and previous Orders by altering the commencing date of the holiday season from April 15 to May 1. Effective from February 6, 1957.

No. 83. The Wages Regulation (Perambulator and Invalid Carriage) (Amendment) Order, 1957. Dated January 21, 1957, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 4d. Increases statutory minimum remuneration and alters definition of "customary holiday" set out in 1955 Order. Effective from February 6, 1957.

No. 132. The Wages Regulation (Dressmaking and Women's Light Clothing) (England and Wales) Order, 1957. Dated January 29, 1957, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act 1945 (a). *H.M.S.O.* 6d. Sets out statutory minimum remuneration payable in substitution for previous Orders which are revoked. Effective from February 15, 1957.

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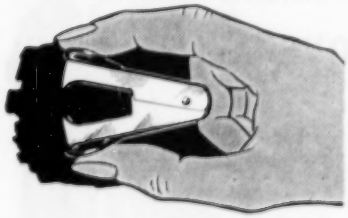

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Management Diary for April

BACIE

2 **Sheffield.** Apprenticeship Training and Education—with special reference to craft schemes. Talk.

16 **Hiscocks, Birmingham.** Annual General Meeting.

24 **Manchester.** Management—The Driving Force. Talk.

BRITISH INSTITUTE OF MANAGEMENT

5- 7 **Droitwich.** Meeting Tomorrow's Problems. Conference for top management.

25 **London.** The appointment of an employee director. Talk.

INDUSTRIAL WELFARE SOCIETY

Residential Courses

5- 8 **Bourne Hall Hotel, Bournemouth.** Weekend conference for Sports and Social Club Secretaries.

Non-residential Courses at Robert Hyde House

2- 4 Canteens course.

9-11 Workshop on training of supervisors.

29-May 3. Course for foremen.

One-day Conferences and Meetings

2 Fundamentals of work study in the office.

9 **Glasgow.** The needs of young workers today.

10 **Edinburgh.** The needs of young workers today.

25 Industrial Editors' (Welfare) Group. Visit to Albert E. Reed & Co. Talk on "Paper."

INSTITUTE OF INDUSTRIAL SUPERVISORS

12-14 **Missenden Abbey, Bucks.** Practice of supervisory management.

12-14 **Ashorne Hill, Leamington.** Work study for supervisory management.

12-14 **Ashorne Hill, Leamington.** The foreman and cost reduction.

26-28 **Waverley Hydro Hotel, Melrose.** Human relations.

INSTITUTE OF PERSONNEL MANAGEMENT

7-12 **London.** Employment and Welfare. Five-day study course.

12-14 **Caerleon.** South Western Region Conference.

13-14 **Coventry.** Midland Region Conference.

25-27 **Buxton.** Joint conference with MoL Personnel Management Advisory Service.

INSTITUTION OF PRODUCTION ENGINEERS

10 **London.** Problems associated with the planning of a new factory. Talk.

29 **Manchester.** Human relations in industry. Talk.

INSTITUTION OF WORKS MANAGERS

30 **Birmingham.** Towards a philosophy in management. Talk.

NIFES

5- 7 **Bristol University.** Fuel Efficiency Pays. Weekend refresher course for works and plant engineers.

OFFICE MANAGEMENT ASSOCIATION

26-28 **Peebles Hydro Hotel.** Selection, Training and Promotion in the Office. Weekend conference for executives with office management responsibilities.

RESIDENTIAL COURSES FOR GIRLS

27-May 4 **Kilvrough Manor, South Wales.** Course for girls working in shops and stores.

SOCIETY OF INSTRUMENT TECHNOLOGY

4 **Northampton Polytechnic.** Discussion on education.

SUNDRIDGE PARK

15-17 **Work Study.** Three-day residential course for senior executives.

URCHFONT MANOR

1- 7 The human factor in the office. Course for office supervisors, secretaries, accountants and other office workers to demonstrate the importance of good communication.

8-14 Thinking, speaking and writing. Course of lectures and practical work on committee and report procedure.

EXHIBITIONS

8-11 **Chicago.** 26th U.S. National Packaging Exposition.

9-13 **Tokyo.** Office Equipment Exhibition.

29-May 4 **Earls Court, London.** Factory Equipment Exhibition.

29-May 3 **Philadelphia.** National Materials Handling Exposition.

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NEW EQUIPMENT

EFFICIENCY AIDS * LIGHTING * PACKAGING * WELFARE * CANTEEN * SAFETY

Firms with new products for better, safer working in industry are asked to send details to the Editor with, if possible, an illustration.

Efficiency Aids

PORTABLE SPRAY

A NEW light-weight, petrol-driven portable spray painting plant is now on the market. It includes the makers' *PR*303 *Hydrovane Compressor* powered by a 75 c.c. single cylinder, two stroke petrol engine with one lever control for starting, running and stopping. The compressor unit and engine weigh only 46 lb. and can be carried with one hand. The makers claim that easy starting is effected by the self recoiling rope type starter, and the low running speed of 2,200 r.p.m. gives long life and quiet operation.

The plant is complete with an L.800 spray gun together with quart container, 30 ft. of air hose, and connectors, and will operate with a range of larger pressure containers, which are available as optional extras. It is designed to meet the need for a self-contained spray painting unit for use on undeveloped building sites, and other areas where no electric power supply is readily available.

A demonstration of the plant spraying any normal decorating material will be given on site without obligation.

Alfred Bullows & Sons Ltd., Long Street, Walsall.

LINE MARKER

THE incorporation of an off-set brush into the *Mini* line-marking machine is to facilitate the marking of lines close to walls and machinery. The machine uses ordinary white paint and gives a clear, white line. Supplied with a 2, 3 or 4 inch brush, it costs £17 17s.

The En-Tout-Cas Co. Ltd., Syston, Leicester.

ATTRACTIVE PARTITION

THE problem of converting a large room into two smaller ones, or of closing off a recess, is solved neatly and efficiently by the *Wellfold* folding door. Covered in P.V.C. leathercloth in a wide range of patterns, grains and colours to conform with any scheme of interior decoration, the doors are claimed to be quiet in operation and to open or close at the touch of a finger. Fully folded back, the door has a pleated effect with corner piping.

J. Avery & Co. Ltd., 81 Great Portland Street, London, W.1.

EASY REPRODUCTION

SMALL drawings, the makers claim, can be quickly, easily and economically reproduced within the department that creates them, by *Anson Copyfix* equipment. Requiring no dark-room, washing or rinsing, the equipment is capable of reproducing copies of letters, drawings, sketches and other documents in less than a minute. It will reproduce from opaque or translucent originals, and even from coloured originals.

The system is known as the "reflex" method. The original document and a sheet of negative paper are placed on a glass platform on the photocopier, and the lid closed over the two sheets. Light-rays passed through the negative paper are reflected by the bright parts of the original and absorbed by the dark parts. A built-in exposure clock controls the exposure time, which is adjusted so that the only areas on the negative paper which blacken during subsequent development are those which are illuminated by reflected light, while those under dark parts of the original remain white during development.

After a few seconds exposure the two papers are fed into the developing unit and carried through the machine by rubber rollers, which squeeze out excess moisture. After a further few seconds the two papers are peeled apart and the true copy of the original is obtained. The whole process taking less than 60 seconds.

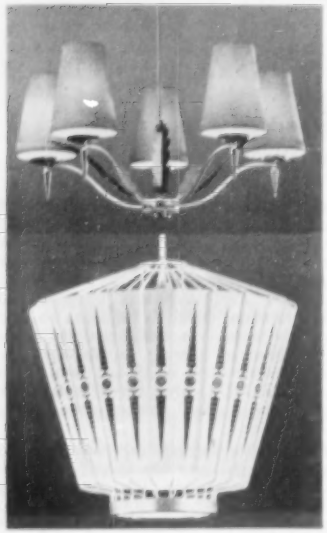
Anson Copyfix equipment includes a combined photocopier and developer unit, with or without power-operated rollers for carrying the papers through the unit. Copies can be obtained on single or double-sided paper, cardboard, airmail paper or on translucent paper for subsequent dye line printing.

George Anson & Co. Ltd., 58 Southwark Bridge Road, London, S.E.1.

COMPACT PROJECTOR

This 35 mm. slide and filmstrip projector is compact (8½ in. × 6½ in. × 3½ in., closed; weight—2 lb. 14 oz.) and easily dismantled for cleaning. At 9 ft. the projected picture is 3 ft. wide. Price complete with slide carrier—£11 10s.; filmstrip holder and lamp supplied as extras. From: Ilford Ltd., Ilford, London.

Lighting



DECORATIVE AND BRIGHT

THESE contemporary design lighting fittings are two of a wide range recently issued by G.E.C., and are ideal for adding a touch of brightness to the office or social club. The one at the top is a polished and satin brass pendant with white relief and red flocked shades, taking five 60W. lamps. (Price £21 plus £4 1s. 11d. P.T.) The other is an enamelled wire lantern in white with polished brass relief, and card diffuser in yellow with black motifs. Diameter 10 in., 10 in. deep. The lantern takes one 100W. lamp and costs £2 plus 7s. 10d. P.T. Illustrations and details of other styles are available on request.

General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2.

Packaging

VERSATILE TAPES

ONE firm of packaging tape manufacturers is now marketing a tape designed to protect pipes against corrosion. *Vylap* is a self-adhesive P.V.C. tape and is said to be extremely tough, with good resistance to acids, alkalis, fungi, bacteria and atmospheric pollution. In addition its elongation enables it to conform to any contours or angles.

Available from the same firm is a product for cable wrapping and jointing, electrical maintenance and wiring, sealing and the manufacture of electrical components. *Dilec* has no apparent adhesive, the adhesive qualities being incorporated in the base material, enabling the tape to be used cleanly and efficiently. In addition, it is said, the tape can be heat sealed, cemented or high frequency welded.

The *Rototaper* is an automatic machine worked by compressed air, which applies tape to cylindrical containers. The turntable will take tins of 2⅞ in.-6½ in. diameter, from ½ in.-8⅝ in. high, at a rate of 30 to 40 tins per minute. Simple adjustments are needed to take tins of varying sizes, and Transotape, Cellulose or Transovil Thin (P.V.C. unplasticised) self-adhesive tape can be used.

John Gosheron & Co. Ltd., The Packaging Tape Centre, Albert Embankment, Vauxhall, London, S.E.11.

Welfare

INJECTION KIT

THE *Ampin Emergency Tin* has been designed for those first-aid boxes and posts where Morphine or its equivalent must always be at hand. The tin is strong, clearly labelled and sealed with tape which is quickly stripped. It contains, for subcutaneous injection, six *Ampins* of either Morphine Sulphate ¼ gr. or an equivalent dose of Tetrapon which is a mixture of alkaloids of Opium made to Swedish pharmacopœial standards. Also included are six tie-on labels stating that Morphine has been given, and on the inside of the lid there are clear pictorial instructions for use. The *Ampin* is recognised as an "ampoule-syringe" by the Ministry of Transport and Civil Aviation.

Cuxson, Gerrard & Co. Ltd., Fountain Lane, Oldbury, Birmingham.

SPEED AND HYGIENE

THE *Air-Towel* has been designed for high speed hygienic drying of hands, face, arms and hair. It deals with four persons at once, and on hand drying, the makers say, it can cope with a continuous flow of 8-10 persons per minute. The unit is self-contained, semi-circular in shape, and designed to stand against the wall or, where island units are preferred, two can be mounted back to back to form a single circular unit. The heat is provided from the existing steam supply, electricity only being used for driving the fan.

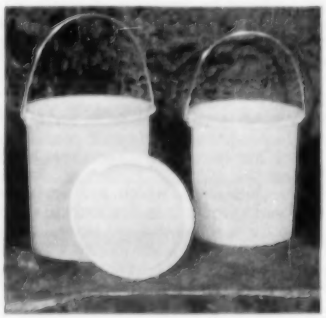
The *Air-Towel* has been awarded the certificate of the Royal Institute of Public Health and Hygiene. Fitted with a 3 phase motor, the price is £99 15s. 10d. complete.

The Spiral Tube & Components Co. Ltd., Osmaston Park Road, Derby.

Canteen

STORE IN POLYTHENE

THESE white polythene food containers have several features of interest to canteen officers faced with the problems of storing loose food such as soups, stews, sauces, fish and vegetables in refrigerators. With air tight press-in covers and removable handles, the



containers can be stacked and their hygienic properties comply with a recent government order on the storage of food in catering establishments. The material from which they are made renders them unbreakable and resistant to acids. Another point in their favour, the distributors claim, is that they are used generally throughout the catering trade in Switzerland.

Leon Jaeggi & Sons Ltd., 29 Dean Street, Oxford Street, London, W.1.

Safety

GUARD AGAINST FLARE

A NEW anti-flare agent is now available, which, the makers claim, will render flame proof any water absorbent materials made from natural fibres. *Dot*, it is said, has this effect upon all such garments after they have been soaked in the solution for only five minutes. The makers add the rider, however, that *Dot* is intended to provide protection against flame *in addition to all other safety precautions*.

Gee Cross Laboratories Ltd., Railway Street, Hyde, Cheshire.

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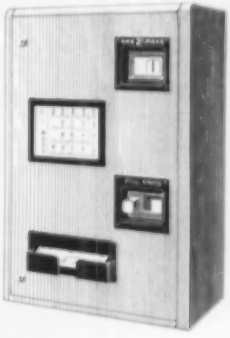

'Multi - ticket' machine issues a card of 12 or 20 tickets to the value of 2/-

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TRADE MARK

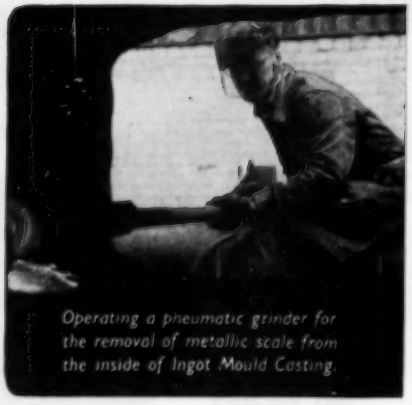
TRANSPARENT

Safety Sheet

for their protective face shields in their vast iron foundry in Landore

ABOVE

Operating a pneumatic chisel for the removal of metal fins from an Ingot Mould casting.



Operating a pneumatic grinder for the removal of metallic scale from the inside of Ingot Mould Casting.

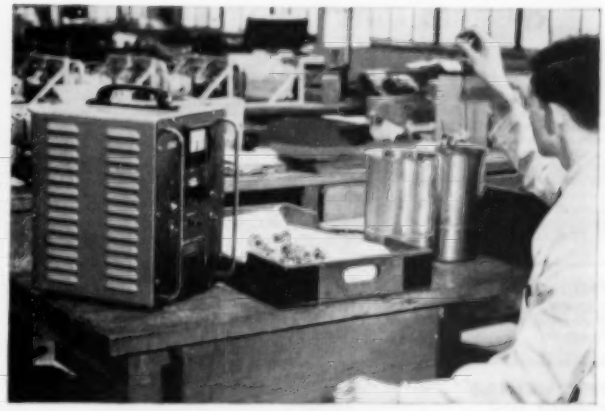
Cleaning out Slag Tap-hole of a Cupola Furnace used for the melting of Pig Iron.

'Celastoid' transparent safety sheet is crystal-clear. It is tough. It is shatterproof. It has just those qualities that make it the choice of men who have to work close to danger in perfect safety. It moulds easily to shape. For visors, for goggles, for machine-guards, for protective sheeting of all kinds, 'Celastoid' has proved it can take it.

The three face shields illustrated are made by Safety Products Ltd.

BRITISH CELANESE LIMITED

Plastics Division, Celanese House, Hanover Square, London, W.1



Using Dawe ultrasonic cleaning equipment to remove dirt, swarf and grease from small parts before finishing.

SOUND CLEANING

IN almost every industry, a cleaning process has to be introduced at some stage in the manufacture of the product and in many branches, such as electroplating, lens grinding, the manufacture of surgical needles and many others, cleanliness is of the utmost importance. Recent work with ultrasonic generators (sources of "sound" too high to be heard) have opened up prospects of an entirely new cleaning technique which not only results in greatly improved cleaning, but does so in a fraction of the time required at present.

If ultrasonic energy is applied to an object immersed in a solvent, a multitude of minute bubbles is formed and the generation and collapse of these bubbles result in a vigorous scouring action which rapidly removes all dirt from the object in the bath. Since the cleaning action penetrates into the smallest holes, grooves and cracks, many components, from which even laborious hand scrubbing could not remove the dirt, can now be cleaned in a matter of seconds by ultrasonics.

One of the main obstacles to the industrial application of ultrasonic cleaning has been the need to make special equipment to suit specific uses. The new *Type* 413 *Ultrasonic Cleaning Generator* by Dawe Instruments Ltd., London, is claimed to overcome this difficulty by providing a unit adaptable to a wide range of requirements.

This consists of a self-contained generator, connected by cable to a transducer which converts the electrical impulses into mechanical vibration.

One generator, drawing only about 250 watts of electric power from the mains, can drive one standard gallon ultrasonic cleaning tank or two half gallon tanks with built-in transducers. Standard immersible transducers are also available to convert existing tanks into ultrasonic cleaning installations. Measuring $2\frac{3}{8}$ in. by 8 in. by 3 in. high, two such transducers can be driven by a single generator. By combining a number of generators and transducers, an installation of any desired power can be achieved.

Clocking-In. . . .

On page 33 of our March issue, we showed a picture of a time card by English Clock Systems. The first recording shown on the card under Thursday should have read "8.15".

It's on the CARDS you'll choose

ECS AUTOPRINT

TIME RECORDER

The quickest, surest way to start and finish work, the Autoprint Time Recorder operates from AC Mains or from an E.C.S. Pendulum Master Clock.

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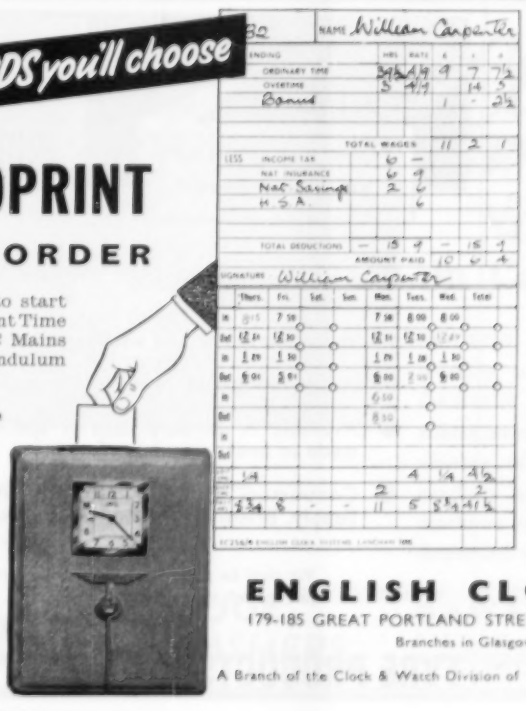

Explanation of recordings

In the illustrated example, the week commences on a Thursday, with normal hours 8 to 12.30, 1.30 to 6 (5 p.m. Fridays).

Thursday

8.15 in red shows the worker was 15 minutes late.

Friday

Colour programme automatically changes to show 5.01 p.m. leaving time in black.

Saturday & Sunday

Factory has closed but Recorder has automatically moved over to correct position for Monday.

Monday

6.30 p.m. in red shows worker returned after tea break and clocked in for overtime. Clocked out at 8.30 p.m. in red.

Tuesday

2.05 p.m. in red shows the worker left early.

Wednesday

12.29 p.m. in red shows the worker left early for lunch.

Time Cards can be supplied specially to correspond with your working week.

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STAFF OUTINGS

A MESSAGE TO—
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CLUB SECRETARIES—WELFARE OFFICERS
PERSONNEL MANAGERS

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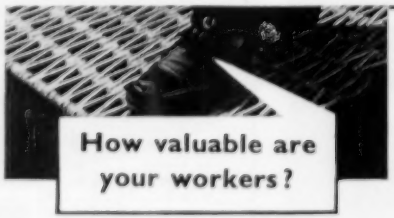
ASSISTANT PERSONNEL MANAGER. British Enka Limited require Assistant Personnel Manager (Male) with opportunity, if suitable, of succeeding Personnel Manager due retire 5 years. Company employs approximately 2,500 people in modern, well-equipped plant producing Rayon Yarn. Practical experience of full range of personnel management procedures covering staff and hourly rated employees essential. Formal training in Personnel Management and/or degree and experience of liaison with Work Study and other specialist functions an advantage. Good salary, pension scheme with provision for transfer, assistance with housing. Applications, in confidence, should state age, qualifications, experience in chronological sequence, preferably present remuneration and be addressed to Personnel Manager, British Enka Ltd., Aintree, Liverpool, 9.



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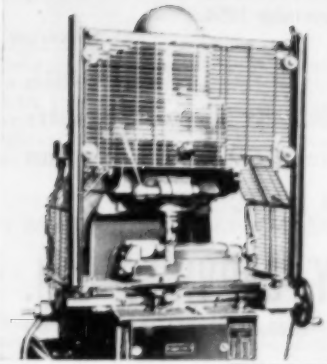

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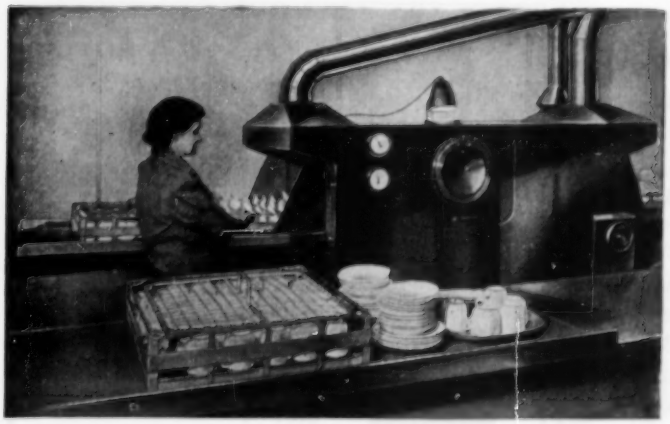

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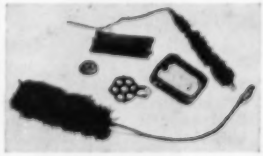

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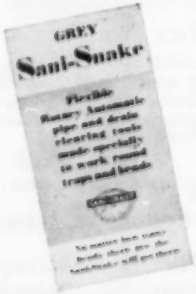

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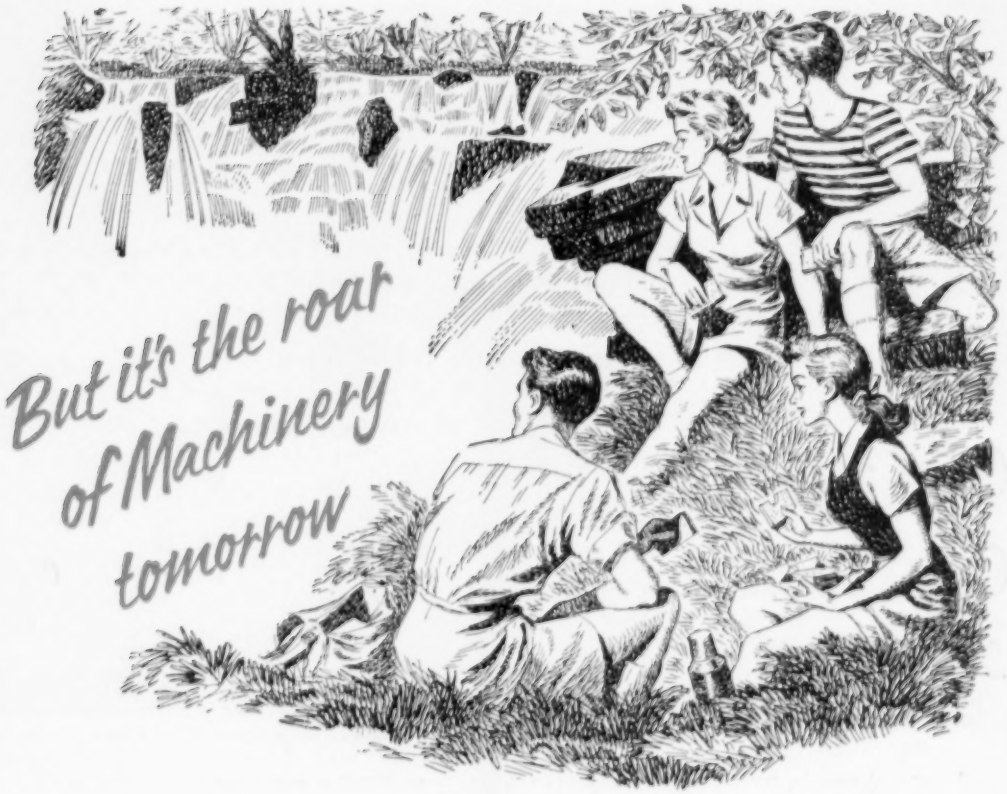

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